# Antiquity

## A Quarterly Review of Archaeology

VOL. VI No. 24 DECEMBER 1932

## Editorial Notes

IT is sometimes difficult to decide what to say in these Notes ; and, always, to know how to say it. One must select a matter of general interest and importance, and one must express one's opinions without giving offence. The accepted rules eliminate certain easy targets of criticism, and if one does not criticize at all one is open to the accusation of log-rolling. We do not wish these Notes to fall to the level of some current literary journalism. But what is one to do if all avenues are closed, as at this time they usually are ? The digging season is over, and has been full of interesting results ; but one must not exploit other people's work before they may have been able to exploit it themselves. That is a pastime reserved for Fleet Street. The voice of the tempter whispers ' Why not a few words about ANTIQUITY ? It is December and they will be considering whether to continue their subscriptions'. But will this, after all, produce the desired effect ? Who can say ?

It is our usual custom at this time of year to draw attention to the completion of one more volume, and consequently that the subscription for the next becomes due. At the risk of reiteration we therefore remind our subscribers that the four numbers which are in contemplation for 1933 bring responsibilities, and that the usual cheques and

*notes* will be welcomed. It does save much trouble (and even expense) if these payments are made early in the year—we do not, for various reasons, like having to send out ' reminders '.

Last December our Notes dwelt on the economic situation which was then, and still is to some extent, affecting everyone. None the less we feel that in certain ways the effect can be allowed to carry one too far. We expected the withdrawal of subscriptions, and have received notices to that end, but in spite of this we congratulate ourselves that we have been able to produce ANTIQUITY for another year, and without curtailing its form or the number of illustrations. Further, we intend to do so in 1933. The diffusion of knowledge must go on in spite of depressions.

Some of our subscribers have, we know, been influenced by what we have said in former Notes, and have continued their support at some personal sacrifice because they felt this was not the time to withhold it. Others, to judge by results, have not been influenced—or perhaps (horrid thought) may have been influenced the other way !

It will be best to leave it at this, and trust to the goodwill and the same support of those who during the past six years have not failed us. The knowledge that we have them to rely on is one of the things which keeps us going.

There are times when we feel in need of some such ' uplift '. Editing an illustrated book of over 500 closely-packed pages each year—and that is what it comes to—is not so easy a task as some may imagine. It would be less arduous if contributors sent articles and illustrations ready to go to press without further preparation. But this does not happen often. Some articles have to be translated into good English (and not all of these are of foreign origin), while for others illustrations have to be provided. Occasionally one for which we have asked comes prepared so carefully that little or no editing is needed, but in the majority of cases this is not our experience. It would be so easy, by taking a little thought, to lighten editorial work and with that in view we offer a few practical hints.

First, in the matter of photographic illustrations. Those in ANTIQUITY are printed from copper 'half-tone' blocks. Now what (for short) may be described as the 'grain' of the block is infinitely coarser than the 'definition' of the coarsest photographic contact-print. Consequently most of that fineness of detail is lost if a block is made from a contact-print—that is, a print of the same size as the original negative. Nowadays almost any negative will make a doubly enlarged print without any real loss of sharpness, and with a great gain of size and legibility. From this enlarged print a slightly reduced half-tone block can be made; the result is a picture that is still bigger than the original negative, but infinitely superior to the (smaller) one that would have been made from a contact-print.

The first rule, then, is always to supply enlarged, rather than contact, prints. It does not matter how large of course. A half-tone block 7 by 5 inches can be made from a print 34 by 28 inches, which itself may have been printed from a negative of 5 by 4 inches. It *does* matter, however, what sort of print is made. Here photographic skill comes in. Only a good photographer can make a good print; and only he, sometimes, after several failures: for every negative varies in density and requires therefore a different length of exposure. The ordinary commercial photographer is too often content with his first (unsuccessful) effort—usually a pale, half-baked affair, and the ordinary archaeologist is too often content to accept it. A good photographer can get wonderful results by enlarging from a poor negative, but no blockmaker in the world can make a good block from a thin or bad print.

If this simple matter were properly understood, there would be fewer eyesores in scientific publications.

The word 'eyesores' reminds us of certain illustrations—we will not specify them further. You may have reached the stage of getting the perfect enlarged print or the impeccable drawing or map, and still your labour and skill may be rendered useless, when published, by undue reduction. Illustrations are meant to be *seen*, and they are mere waste of money if they are illegible. Excessive reduction defeats the whole purpose of illustration, which is to throw light upon the subject, not to darken it. If it is a question of cost then surely one

large picture is better than two small ones, if smallness carries with it a blurring of detail. These criticisms apply with particular force to the sketch-maps illustrating archaeological books and articles, to drawings of flints and to air-photographs. They can be avoided if the author is firm and the editor reasonable.

The second rule comes logically before the first, but it lies beyond the control of the editor. It is—to take good photographs ! How often have we suffered from photographs of some sunny eastern landscape reduced to desolation by the camera. Many a one suggests that, when it was taken, the elements had conspired together to produce simultaneously a dust-storm, rays of blinding white light from the ground, heavy rain, and a tilted horizon. Nowadays good photographs are quite easy to obtain with a very cheap camera. Films are easy to develop everywhere (at night if no dark room can be used). During a recent holiday we obtained over 400 negatives, nearly all good enough for reproduction *anywhere*, for a total cost, including the camera (but not of course the prints), of well under five pounds. Some are published in this number of ANTIQUITY.

We write these Notes not merely for selfish reasons, but because there certainly exist many misconceptions on the subject, and because photography, and the publication of illustrations, is now admitted to be an essential part of the archaeologist's equipment. Every experienced excavator of course knows this : but the Notes are not written for him. There are many who do good archaeological work as a hobby, and it will often be vastly improved by attention to such details as these.

---

## VOLUME VII (1933)

*We have placed in this number the usual form and envelope for the payment of subscriptions, to which we have referred in our second paragraph. We hope they will receive attention.*

# Ancient Cultivations

by E. Cecil Curwen

THE ability to recognize the traces of ancient cultivation is essential to all students of earthworks and field-workers. The scope of our study is being widened, so that we are interested not merely in fortifications but in any kind of interference with the surface soil resulting from man's activities in the past. It would be purely an arbitrary distinction to be interested in a hill-fort and not in the surface traces of an agricultural village of the same date, and these same surface traces consist very largely in lynchets, or cultivation terraces, the presence of which is often the sole clue to the site of the settlement.

It is a matter of observation that agricultural processes at different periods may leave quite distinct and separate kinds of traces on the ground. This depends on the kind of plough used, and on different habits with regard to the shape, size, and outlay[1] of the fields. The one feature that is common to most ancient fields is the tendency to form terraces on sloping ground, due to the way in which the soil creeps downhill under the influence of ploughing and rain-wash, forming an accumulation along the lower edges of the plot.[2] In this way ancient fields are often perpetuated, especially on chalk hills, by scarps called *lynchets* which mark the limits of the plots, and often cover large areas with quite a chessboard pattern, or in other cases with step-like terraces. The accumulation of soil at the lower edges of the plots, distinguished by the term *positive lynchet*, naturally has its counterpart in the denudation of soil along the upper edges, leaving a scarp called a *negative lynchet*. A proper appreciation of this distinction is essential for elucidating the history of a series of lynchets, especially where there is reason to think that changes have occurred in the outlay of the plots, or where lynchets come into association with earthworks which may be earlier or later than the cultivations.

---

[1] The cacophonous and ungrammatical 'lay-out', an Americanism chiefly patronized by mushroom estate agents, is to be deprecated.

[2] The present paper is intended to supplement what was said in my paper in Antiquity, 1927, I, 261–289, to which the reader is referred for much ground-work.

Thus at Cissbury (Sussex)[3] the southern rampart of the fort appeared to occupy the line of one of a series of lynchets, and it was desirable to determine whether the rampart had been thrown up on top of the crest of a pre-existing positive lynchet, or whether the soil forming the lynchet had accumulated in the angle behind a pre-existing rampart. A section cut through the rampart revealed that the latter alternative was the right one in the first instance, that is, that the rampart was made first ; then came the ploughing ; but finally a later rampart was constructed on top of the lynchet to heighten the first one. A study of the distribution of pottery fragments in these three deposits of soil—the first rampart, the lynchet, and the second rampart—led to the conclusion that the fort was constructed in the Iron Age, about 300 B.C., and that after its desertion about 50 B.C. the interior was ploughed up, both before and during the Roman period ; while at some later date, probably at the time of the Saxon raids, the place was re-fortified by the additional rampart (fig. 1).

Again, on Thundersbarrow Hill (Sussex) there is a very extensive area covered by ancient fields, and in one part it looks very much as if a later series of lynchets had cut obliquely across the upper part of an earlier set, leaving the corners of some of the supposedly older fields peeping out as triangular patches from under the edge of the apparently later ones. Surface observation, aided and abetted by the air-photographs,[4] might have made out an excellent case for a differentiation in date between these two sets of fields, but a few short sections dug into the lynchets revealed that the two series are separated by a negative lynchet, indicating that the 'earlier' set (which is situated lower on the hill-side) must have been under cultivation simultaneously with the 'later' set, and that therefore the oblique arrangement was merely a matter of topographical convenience, and does not indicate a difference of date (fig. 2).

The same hill provided yet another instance of the usefulness of recognizing the negative element in lynchet-formation. On the top of the hill is a small Iron Age fort, and a section dug through the western rampart failed to disclose any ditch at all, but only a scarp hollowed out of the solid chalk. The explanation is that the ground immediately outside the fort had been under the plough during the Roman period,

[3] *Antiquaries Journal*, XI, 21–3.

[4] The site is unfortunately marred by military trenches dug during the War, resulting in the complete destruction of one of the triangular patches and the obscuring of much of the rest.

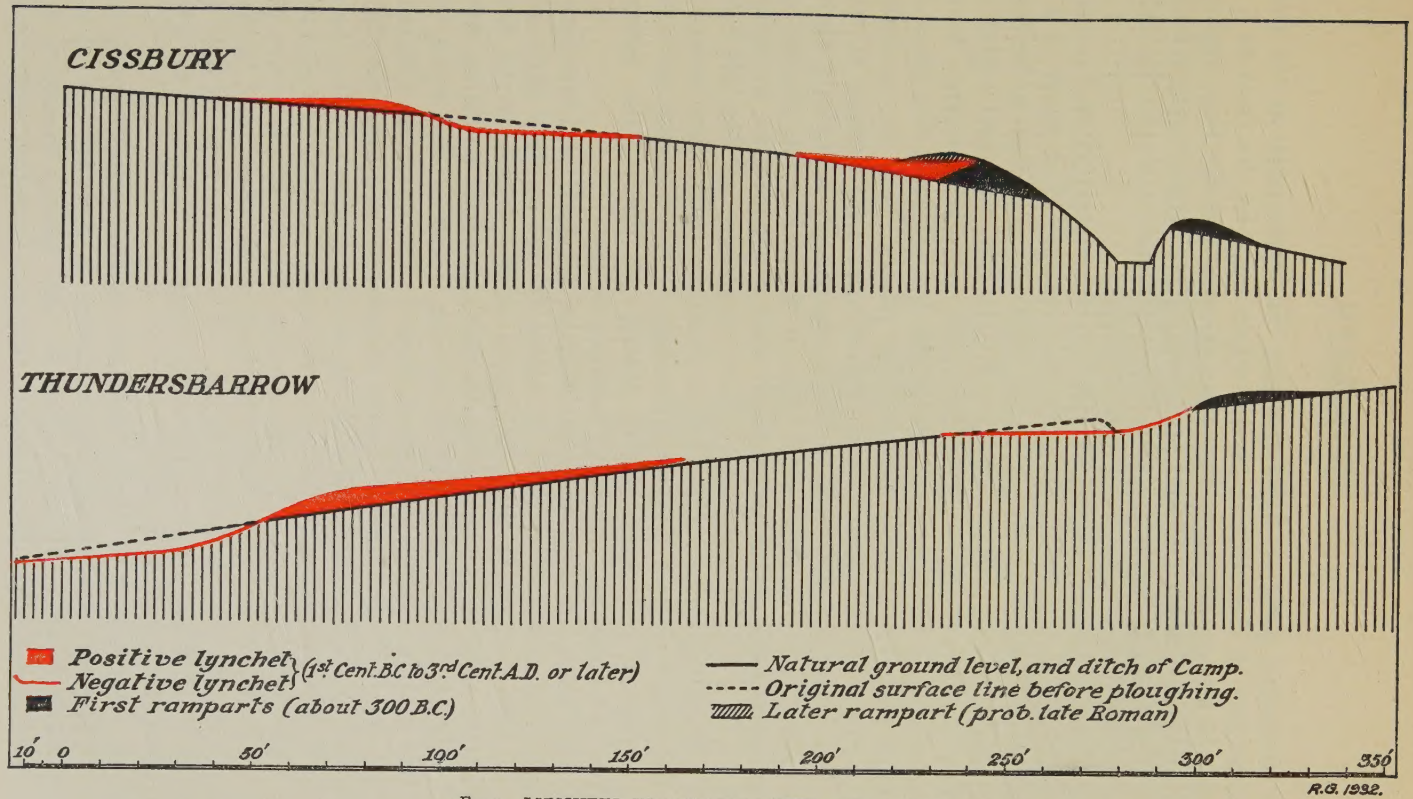



FIG 1. LYNCHETS IN RELATION WITH HILL-FORTS

and an immense positive lynchet along the lower edge of the field has its counterpart in denudation of the upper edge of the field to a depth of some five feet, completely removing the ditch of the fort, and leaving the soil of the rampart perched on top of a bare chalk scarp which is in reality the negative lynchet. In ordinary parlance it may be said that the ditch had been 'ploughed away' (fig. 1).

As a result of surface observation, air-photography and excavation, it is now sufficiently established in this country that there is a field-system distinguished by small, squarish fields which is to be dated in round figures to the millennium 500 B.C. to A.D. 500, and which is best described as the Celtic field-system. In marked contrast to this is the English open-field system which had its origin in the obscurity of the Saxon conquest and lasted in some places down to comparatively recent times. There the principal distinguishing feature is that the individual plots are long and narrow, nominally a furlong (660 feet) in length, and a chain (66 feet) or less in breadth. On sloping ground these strips may be arranged parallel with the contours, in which case lynchets will form, making as it were a staircase up the hill ; or they may be placed at right angles to the contours, each strip mounded up in the form of a ridge to facilitate drainage. Such ridges are a familiar feature in many counties, where parcels of them have often been enclosed by hedges to form large modern fields.

It will thus be seen that the Celtic, English and modern field-systems admit of ready distinction owing to the marked contrasts they present. But extremely little is known of the origin of the first two, or of the existence of any recognizable systems which could be attributed to the Bronze Age or earlier. Moreover, most of the work that has been done on this subject has been done in the south of England, and there are large gaps in our knowledge of ancient field-systems elsewhere. The sudden supersession of the Celtic by the English system in certain counties is a powerful argument for the completeness of the overthrow of the Celts by the Saxons in those parts, but in Kent, where peaceful penetration has been claimed by the historians, the Celtic field-system and its fate have not yet been studied. The Celtic type of field appears to persist to this day in those counties, such as Cornwall, to which the Saxons did not penetrate early.

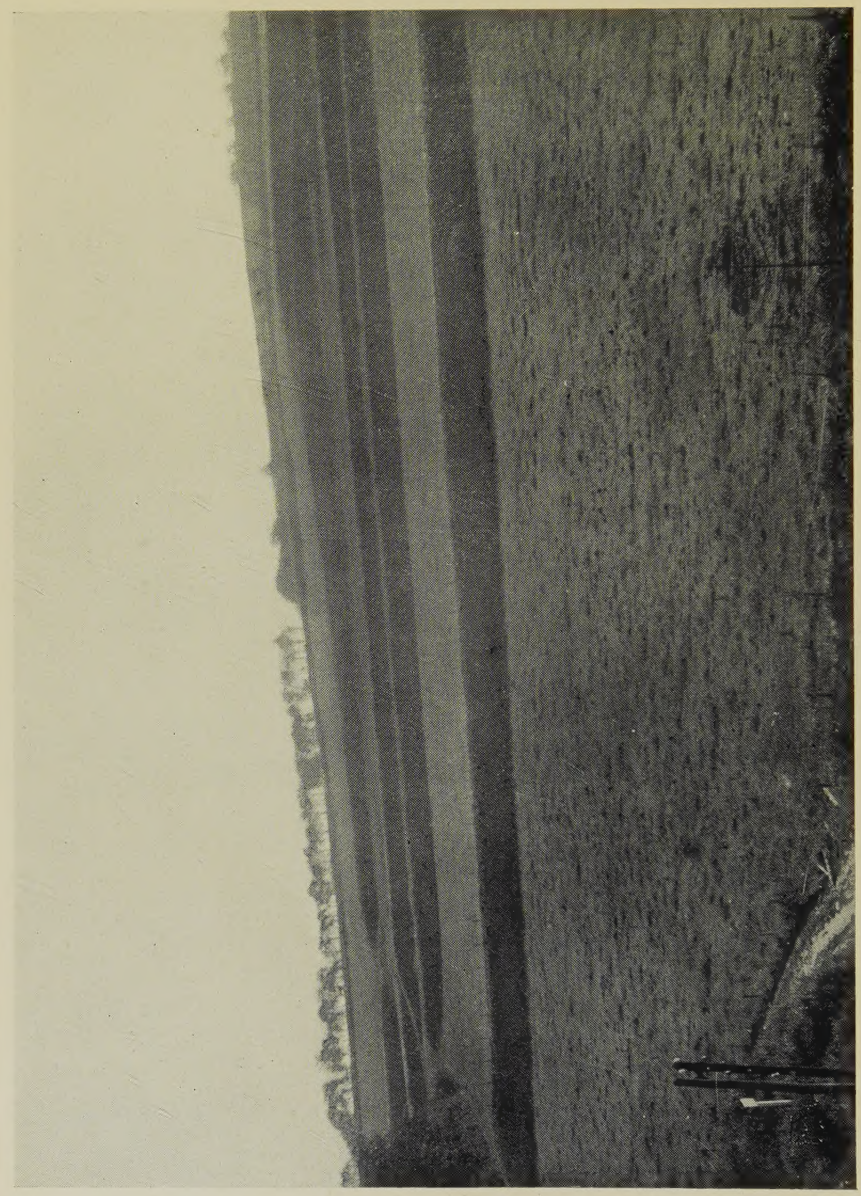
With a view to stimulating research on this subject the Council of the Congress of Archaeological Societies is issuing (1932) a leaflet summarizing what is known about it, and giving guidance to field-workers and others as to the kind of thing to look for, and the features

# PLATE I

LYNCHET AT EU, SOMME, FRANCE
*Ph.* F. Burtt

*facing p.* 392

PLATE II



LYNCHETS AT EU, SOMME, FRANCE
*Ph.* F. Burtt

PLATE III

LYNCHETS AT BELLIFONTAINE, SOMME, FRANCE
*Ph.* F. Burtt

PLATE IV

STRIP-LYNCHETS IN PROCESS OF FORMATION, VRESSE, BELGIUM

*Ph.* E. C. Curwen

to note. It is hoped that wide use will be made of this, so that evidence may be gathered systematically all over the country. Individual lynchet-systems are, of course, dated principally by locating and dating the settlements with which they appear to be integrally associated.

Although no existing remains of fields of the Anglo-Saxon period are known, documentary evidence gives us no reason to think that the English field-system was derived from the Celtic in this country. On the contrary it appears to have been introduced *de novo* by the Anglo-Saxons from abroad, and there is some evidence that analogous systems with local variations may have been diffused through parts of western Europe by conquering Germanic tribes.[5] But however this may be, the origin of both systems must clearly be sought on the Continent, and for this reason we are anxious to introduce the study to foreign archaeologists to whom for the most part it is as yet a *terra incognita*, though fields of Celtic type have been discovered in Holland by Dr van Giffen and described in ANTIQUITY.[6] For this reason we welcome two recent papers which reveal the stirrings of interest in Denmark and France.

### PREHISTORIC FIELDS IN JUTLAND[7]

Danish observers have long been familiar with traces of ancient deserted cultivations in their own country. Quite independently of similar researches in England, Professor Hatt has studied this subject in Denmark, making extensive observations, surveys and excavations. His results are embodied in this paper, in which he observes with satisfaction that his conclusions are in complete agreement with those of Crawford and other workers in England.*

The author recognizes five types of derelict cultivations in Denmark.

(1) Fairly modern fields, which have been tilled for two years and abandoned. This appears to have been a habit of some farmers towards the end of the eighteenth century

(2) The so-called ' Hochäcker ', which correspond to the strip acres of the English open-field system, and are mounded up to form ridges, as is the case in many parts of England. This type is referred

---

[5] E. C. Curwen, *Air Photography and Economic History* (Economic History Soc. Pamphlet no. 2).

[6] ANTIQUITY, 1928, II, 85–7.

[7] Gudmund Hatt, ' Prehistoric Fields in Jylland ' (Jutland), published in English in *Acta Archaeologica*, II, pt. 2, 117–158. Illustrated with photographs and two plans. (Copenhagen, Levin and Munksgaard, 1931).

* Including the writer of this article and his father.—EDITOR.

to medieval times, and the author correlates it with the introduction of the mould-board on the plough, whereby the sod is undercut and turned right over. This is a view to which we had already inclined.

(3) A type characterized by long, parallel rows of stones separating the field-strips, with additional heaps of stones often found lying round a large earth-fast stone, and considered to be the result of clearing the field. The length of the strips is, unfortunately, not stated, but the breadth is given as 11 metres (36 feet), and there is no ridging. In some of the associated heaps of stones a large quantity of potsherds was found, of pre-Roman character, from which fact the author assigns these fields to the earliest part of the Iron Age in Denmark. No strips of similar character and of such early date have yet been described in Britain, though perhaps the nearest approach may be found on Dartmoor, particularly in the neighbourhood of Kes Tor rock (ANTIQUITY, I, 277, 283, fig. 21).

(4) The fourth type is described in detail, and most closely approximates to our British cultivations of Celtic type. The fields are rectangular, varying in area from 1.75 to 0.05 acres, but most commonly falling between $\frac{1}{4}$ and $\frac{3}{4}$ acre. They are separated by banks, termed ' balks ' by the author, 10 to 20 feet broad, and 4 to 12 inches high, consisting primarily of turf-mould collected from the surface of the ground when the fields were first laid out. The detailed interpretation of the sections of these balks is difficult to follow, owing to the use of technical terms such as ' podsol ' and ' podsolation ' which are not to be found in Murray.

Some fields of this kind on Byrsted Heath are associated with others, evidently contemporary and balk-enclosed, but which form long strips up to 1100 feet by 50 feet. These recall the strips in type 3, the only difference being, it seems to us, that the field-boundaries consist of collected stones in the one case, and of collected turves in the other ; and it does not seem to us that such a distinction has any practical value, possibly depending only upon the nature of the ground. Balks like those here described must be rare or absent in Britain, where the fields are usually demarcated by lynchets. At Park Brow (Sussex) balks consisting of gathered flints occur—the only instance of which we are aware. Lynchets, about 3 feet high, also occur among the Danish fields. We cannot help feeling that such long strips as are here described as being associated with rectangular fields, must have been transversely divided into squarish plots, not always marked by

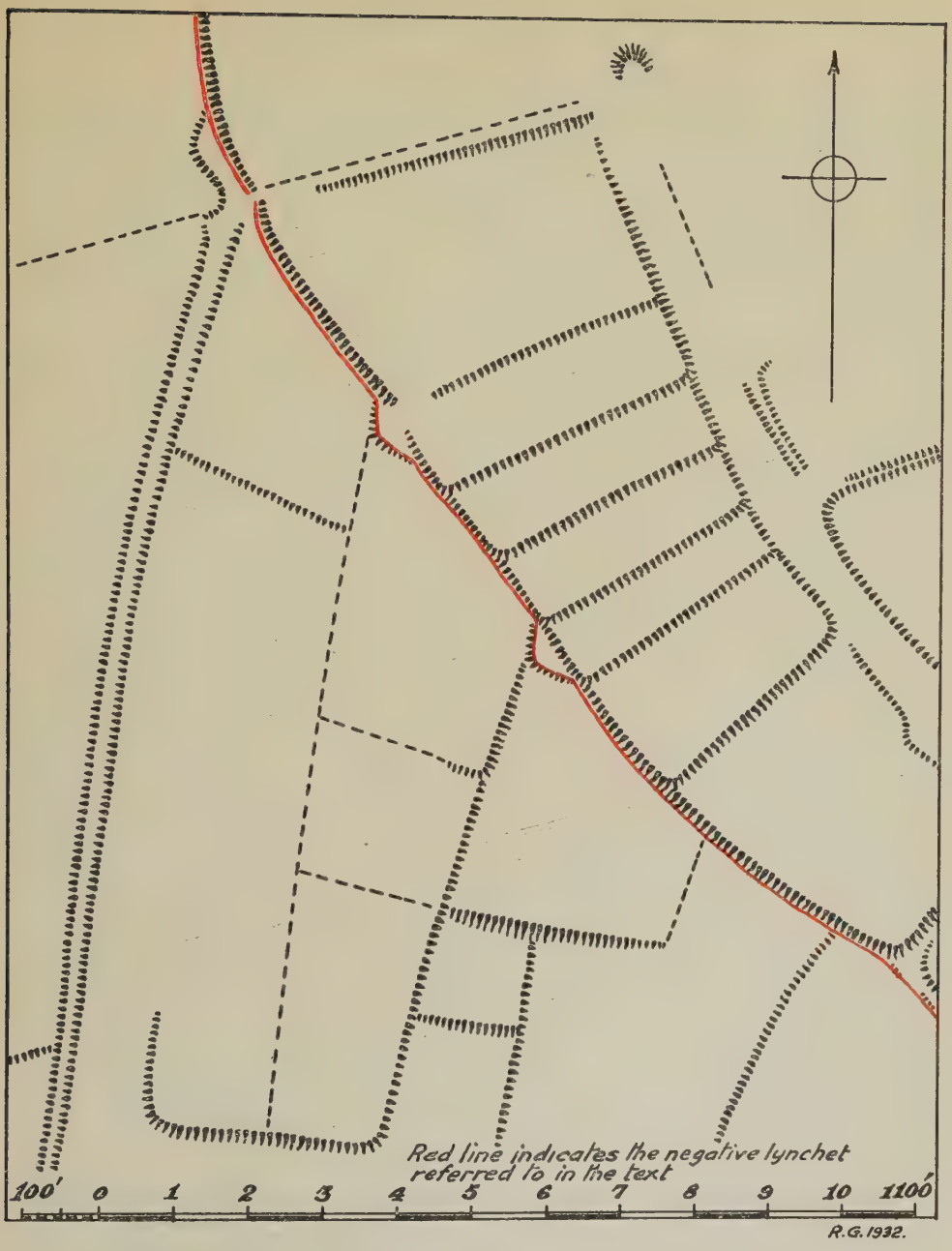



FIG. 2. LYNCHETS ON THUNDERSBARROW HILL, SUSSEX, ILLUSTRATING THE DIAGNOSTIC VALUE OF NEGATIVE LYNCHETS

permanent boundaries. Something analogous may be seen in British Celtic fields, as for instance, on Charlton Down, Wilts (ANTIQUITY, 1, 276, fig. 4), and in the strip-cultivations still in use in parts of the Isle of Skye (ibid. 277, figs. 12, 13, and p. 278, footnote). These latter may measure 1200 feet by 120 feet, and are transversely divided by non-permanent boundaries into four or five plots which subserve the purposes of rotation of crops for a single owner. In any case there is a marked tendency for British Celtic fields to be arranged in long rows, collectively resembling the Danish strips.

As illustrating fields of type 4, three groups are described in detail, the description being accompanied by excellent plans from surveys made by the author. In only one instance—that of Byrsted Heath—was an associated field-way noted (this term is preferable to 'alley'). At this site the author collected several samples of soil both from the old fields and from the virgin heath, and found confirmation of the observation of Dr O. Arrhenius that soil which has been cultivated in former times contains a greater proportion of phosphoric acid than uncultivated soil. This hint is one which is perhaps worth following up in our efforts to trace Neolithic or Bronze Age cultivations on our western moors.

At Albæk Heath another rather new feature of interest arises. The fields here (type 4) are covered by hundreds of what the author calls by the Danish term 'Rodvælter' for lack of an English equivalent. Each consists of a mound some 20 feet long by 10 feet broad, and 18 inches high, accompanied by a corresponding depression on one side. This is the characteristic mark left by a tree that fell long ago in a storm ; the root of the falling tree has turned up a mass of soil forming the mound which may persist long after the tree itself has vanished, while the depression represents the place from which the roots have been torn when the tree fell. We have long been familiar with very similar features in the beech-woods on the Downs in West Sussex, but have hitherto regarded them as old saw-pits dug by wood-cutters to enable them to get underneath a felled tree-trunk for the purpose of sawing it up more easily. The Danish Rodvælter represent, therefore, a forest which grew up after the desertion of the cultivations, and which in turn was succeeded by the heath.*

* Precisely similar pit-and-bank groups are found on the limestone uplands of the Cotswolds, and were formerly mistaken for pit-dwellings. Good examples may be seen between Avening and Nailsworth and on Minchinhampton and Selsley Commons. Dr Hatt's explanation was put forward by me quite independently many years ago, but I do not think I ever published it. It is satisfactory to find that it is supported by the Danish evidence.—O.G.S.C.

The date of these fields of type 4 is provided by the discovery in some cases of associated settlements, which are attributable to the pre-Roman Iron Age, several fine specimens of pottery vessels being illustrated by photographs. Fragments of similar pottery were occasionally found under heaps of gathered stones in the corners of the fields. This dating is, of course, in complete agreement with that of the corresponding type of cultivation in England.

In addition to habitation-sites, some burials of the same period have been found, either in or on the balks, consisting of small barrows containing cremations and pottery. Similar small barrows have occasionally been observed on the crests of lynchets in Sussex, as for example on Windover Hill (ANTIQUITY, I, plate II, f.p. 272), and on Kithurst Hill. In this category should also be placed, perhaps, the four first century urn-burials recently discovered in the body of a very large lynchet near Lewes. We may yet discover that it was a habit among the Celts to bury on the edges of their fields, in which case one is tempted to surmise whether they may have done it from a superstitious motive with a view to increasing the fertility of the ground.

With regard to the purpose of the balks or field-banks, the author suggests that they may have been intended to conserve surface water, and that, if so, this may suggest an origin for the system in a drier climate. Such a theory is, however, too poor in evidence to be worth much, and is not really strengthened by the further suggestion that the simple type of plough which must have been used is still seen in Mediterranean regions. After all, our very knowledge of agriculture came ultimately from that quarter, and so did every successive improvement in methods. The author is, however, undoubtedly quite right in attributing these small flat fields to a simple type of plough without a mould-board. This he terms an *ard*, but unfortunately does not describe it, though he rightly contrasts it with the larger wheel-plough with mould-board which was responsible for the high-ridged strips called by the Germans 'Hochäcker'. He suggests that the introduction of the larger plough led to the desertion of these earlier fields and a migration of the population to heavier and more fertile soils. In England this is just what seems to have happened, but it was done by invading Teutons. Professor Hatt does not, however, venture into the realms of ethnology in this connexion.

He regards these groups of fields as representing an old form of open-field system. In many cases a field has evidently been divided

into two or more almost equal parts by transverse balks which are lower and narrower than the others, and he suggests that this feature may indicate a dividing of fields between inheritors.

A list is given of sixty-nine sites in Jutland where fields of type 4 are to be found.

(5) The last type in the author's description of ancient cultivations is peculiar in the entire absence of any kind of field-boundary or of ridges or furrows. The only feature suggesting former cultivation is the fact that the stones are gathered into irregularly placed heaps over an area, it may be, of 50 to 70 acres. Under one of these heaps the author found neolithic potsherds which leads him to attribute the whole system to that period, though he adds a proviso to the effect that under another heap he found Iron Age sherds. He hesitates, therefore, to assign all the 'fields' of type 5 to a date earlier than the Iron Age, but regards them as more primitive. This is the weakest part of the whole paper. That these cultivations (assuming them to be such) should be of neolithic date is quite possible, but we should welcome more definite evidence. They would certainly fit in with the view that neolithic man tilled the ground only with antler picks or similar tools which do not make furrows.

Professor Hatt's paper is altogether admirable, and should be a pattern to workers in other countries.

### Lynchets in France

The second paper is by a French geographer, M. Léon Aufrère,[8] who approaches the subject of lynchets from the standpoint of a geographer rather than that of an archaeologist. The subject has not hitherto been properly studied in France, and the author has not been acquainted with the results of similar research in England. It is all the more to his credit that he has recognized that lynchets are the results of human activity in agriculture, though he finds it difficult to persuade his countrymen of this, and is at much pains to do so in this paper. This is all the more surprising seeing that many French lynchets are still under cultivation. His arguments are excellent, if somewhat superfluous to English ears. Nevertheless his paper is full of interesting and useful points.

---

[8] Léon Aufrère, 'Les Rideaux: étude topographique', published in *Annales de Géographie* (Paris, 1929), XXXVIII, 529–560, illustrated.

He reviews and rightly rejects the quite impossible theories that have hitherto held the field in regard to the causation of lynchets—those of water action, the slipping of clay slopes, raised beaches, and earthquakes (!)—and substitutes that of agriculture, though he does not claim to be the first to do so. It seems strange to us that this should not have been recognized before, but the fact is that for all their magnificent achievements in other branches of archaeology the French are not students of earthworks, and have not developed that ' field-sense ' which for the field-worker corresponds to the motorist's ' road-sense ' or the physician's ' clinical acumen '. It is in the possession of such a guiding instinct based upon experience and common sense that this author scores over some of his *confrères*.

The French term *rideau*, applied equally to lynchets in the north and to vineyard terraces in the south, signifies literally a fold in a curtain, to which the scarps of lynchets are likened. This is a legal rather than a popular term, and Godefroy's dictionary defines it thus :—' Un rideau est une langue de terrain escarpé et en pente qui sépare deux héritages voisins ', *i.e.*, a long, narrow scarp which separates two contiguous plots belonging to different owners. Another term in common use among peasants in the north of France is *royon*, *réyon*, *riyon*, or *rouyen*, the root of which is *roye* or *raye*, *i.e.*, the furrow made by the plough. *Enroyer* and *déroyer* mean respectively to make the first and the last furrow in a field. It seems to us likely that this is the origin not only of the term ' rhine ' which is applied to the drainage ditches in the flat parts of Somerset, but also of the word ' rein ' which, we understand, is synonymous with ' lynchet ' in Yorkshire.

Besides these there are an immense number of local terms applied to lynchets, most of which betray the agricultural, or at least human, origin of these banks. *Fossé* and *douve* signify primarily a ditch, and are thus comparable to *royon*. *Rive* means edge or margin, while *fraite* (from Lat. *fracta*) signified first a gap in the continuity of a lynchet designed to let carts into or out of a field, and then any field-way, especially those that run below a lynchet. *Croc* is a term applied equally to lynchets or sand-dunes, and seems likely to be the Celtic *cruc*, a ridge or mound (though the author attempts to derive it otherwise, and less convincingly).

The author then gives a minute and accurate description of the usual profile presented by lynchets, noting especially the raised crest and the slight hollowing of the ground at the foot of the scarp, and showing how these features result from ploughing, and especially from

turning the sods over downhill, year after year. Thus the upper half of the slope of the lynchet consists of the accumulation of soil belonging to the field above, while the lower half is due to the denudation of soil at the top of the lower field. If the two fields belong to different owners, the slope of the lynchet must therefore be shared between them, and this recognition of the positive and negative elements[9] in lynchet-formation is revealed in local customs. The commonest arrangement is that the slope of the lynchet belongs to the owner of the lower field, except such part as may be covered by the legs of the owner of the upper field when he is sitting on the crest of the lynchet with his legs hanging down. This amount is therefore called *la jambe pendante*. The two neighbours often try to widen their fields at the expense of the stability of the lynchet-face, with disastrous results to both. Local custom does not allow the lower owner to destroy the lynchet, either by undercutting it with a pick, or by cultivating it, for once the protecting mantle of turf is gone nothing can prevent it from crumbling. The grass is, however, burnt to prevent it from seeding among the corn. A case is on record where a hedge planted on the crest of a lynchet by the owner of the upper field gradually slipped down the face of the lynchet till it came below the *jambe pendante*, when it was promptly claimed by the lower owner, and a lawsuit followed.

' Double lynchets ' occur in France, as in England—that is, the positive and negative elements are separated in such cases by a narrow strip of original ground-surface. In this country we have long recognized that the intervening strip represents an old field-way giving access to the fields : M. Aufrère, however, does not mention this, but gives us the French terms *riez* and *larri* for this feature, endorsing the suggested derivation of the latter from Lat. *latericus*, ' lateral '. In this case *via laterica* would mean a road along the flank of a lynchet—a neater term than our clumsy ' double lynchet road '.

The relation between the height of a lynchet and the steepness of the hill-side is discussed, and one gathers that though the actual height of the lynchet may vary with the steepness of the slope, the volume of soil displaced does not vary much—the number of years of cultivation being, of course, constant. The volume of soil displaced varies according to the method of ploughing. The easiest way was always to turn the sods downhill, but this soon resulted in the sterility of the upper part of the field ; in recent years sods are turned uphill

[9] The author uses respectively the terms *remblai* and *entaille* for this.

one year and downhill the next, in order to minimize lynchet-formation. In some parts, as in parts of England, soil is actually carried uphill in carts for this purpose.

A study of the sections revealed when lynchets are cut through affords the author an opportunity for recording many sage observations bearing on the nature of their causation. These principally go to demonstrate the impossibility of the theories of solifluxion or natural erosion to explain the facts. Similarly the raised beach and river terrace theories are disposed of by a detailed consideration of the longitudinal elevation of lynchets.

With the paper by M. Aufrère there are three plans[10] and two good photographs of lynchet groups still under cultivation. These plans are discussed in considerable detail, but the gist of the matter is that the particular groups concerned were originally laid out on the *journal* system, the local *journal* corresponding with the English acre, both in area (42.21 acres) and in length of furrow (660 feet). (The term *journal* signifies literally a day's work in ploughing). Two successive periods of lynchet formation are recognized : in the first the ground was laid out in parcels generally containing an integral number of *journaux*, up to six, the length, corresponding to the furrow, varying from 180 to 260 metres (nominally 201 m.), and the breadth roughly half that amount. The secondary lynchets divide these parcels into strips, containing, as a rule, 1½ or 2 *journaux*, or less. Further subdivision, probably more recent, has cut these strips up in two ways : some are split longitudinally into extremely narrow strips in which there is scarcely room to turn the plough ; others are divided transversely into four or six squarish plots which closely correspond in size to the old Gaulish *arepennis*. This mixture of strips and squares is most peculiar, and further work, particularly study of documentary evidence, needs to be undertaken, in order to understand its historical significance. One point, however, is brought out : the *journal* was not introduced till after the Carlovingian epoch when the *bonnier* was in use ; if this is so, these lynchets must be regarded as medieval in origin. We need now to know what the Gallo-Roman system was like, and whether there is any connexion or continuity between it and later systems.

[10] The scale given for fig. 5 is evidently an error due to the plan having been reduced by the editor more than the author intended. Instead of ' 1 : 5000 ' the scale seems to be approximately 1 : 6000. A drawn scale would have obviated this error, and have been easier to use.

I am indebted to Mr J. Pelham Maitland for sending me the photographs of lynchets at Bellifontaine and Eu (Somme) illustrated in plates I–III.

### Lynchets in the Scottish Border Districts

In the south of Scotland and in Northumberland occur isolated groups of strip-lynchets, formerly called ' daisses ' (*i.e.*, daïses, or shelves), producing very remarkable staircase effects on steep hill-sides. These have been the subject of two recent papers by Mr Robert Eckford, of H.M. Geological Survey, Edinburgh, and Mr W. W. T. Hannah, respectively.[11] Mr Eckford cites two groups in Lanarkshire, five in Peeblesshire, one in Midlothian, two in Roxburghshire, two in Berwickshire, and three in Northumberland. To the last-mentioned should be added the group at Housesteads recently described by Mr Percy Hedley.[12]

Each group consists of a number of long, narrow terraces, averaging 250 yards* in length and varying from 6 to 100 feet in width in different sites. The width varies inversely with the steepness of the slope, but commonly corresponds to a half, one or two rods, approximately. The faces of the terraces may be as much as 8 feet high, and some have been built up (as least partly) of stone. The terraces are generally co-terminous ; that is, they all end together, sometimes at right angles to a butte or furrow which runs up the slope. They are not as a rule strictly level, but present a very uniform appearance, and excavation has shown that they are composed of fertile soil, sometimes containing charcoal. Scale-drawn sections across them would have been welcome, so that one might form an opinion as to whether the terraces had been artificially constructed or are merely the result of ploughing. They are found at various altitudes up to 1150 feet, the Dunsyre group being the highest ; that this is not too high for cultivation purposes is shown by evidence of cultivation elsewhere in the same district at 1000 feet and even more. All the terrace-groups face either west or south, and are thus sheltered from the northeast winds while collecting the maximum sunshine. It seems to us almost as if these early cultivators

[11] R. Eckford, ' On Certain Terrace Formations in the South of Scotland and on the English Side of the Border ', *Proc. Soc. Ant. Scot.*, LXII, 107–20 ; W.W. T.Hannah, ' The Romanno Terraces : their Origin and Purpose ', *op. cit.*, LXV, 388–98.

[12] ANTIQUITY, V, 351–4.

* According to Seebohm (*Customary Acres*, 109–10), the furrow of the Scottish customary acre was 235 yds. (227 m.), while the Northumbrian was 280 yds. (256 m.).

realized that the greater obliquity of the sun's rays in a northern latitude could be to some extent compensated for by cultivating steep south-facing slopes. This certainly seems to be a possible cause for their otherwise peculiar situation, for, as pointed out by Mr Eckford, in early days the valleys were too wet and wooded for agriculture to be successful. Very similar terraces may be seen actually being formed by ploughing at the present day on the Continent, as, for instance, at Vresse in Belgium (plate IV*).

Mr Eckford says—' All these terrace groups are in close proximity to an old fort or fortalice. At most of the forts in Peeblesshire no trace of terracing is found ; yet there are no terraces without a fort or ancient tower, or suggestion of such in its proximity '. Unfortunately the term ' fort ' is ambiguous ; does he mean it in the prehistoric sense, or in that of a medieval peel-tower ? Also, such a tower should be within 100 yards or so of the terraces if any connexion is to be argued. He cites Professor P. Hume Brown as saying—' Long after the time of Mary [Queen of Scots], an Englishman thus refers to the custom [of cultivating the hill-slopes] : " 'Tis almost incredible how much of the mountain they plough where the declensions—I had almost said precipices—are such that to our thinking it puts them to greater difficulty and charge to carry out their work than they need be at in draining the valleys" '.

Much of Mr Eckford's paper (echoed by Mr. Hannah) is concerned with proving the human, and probably the agricultural, origin of these terraces. His arguments are sound and, we think, quite conclusive, and by this time the matter should be considered as settled in Scotland as it is in England. Complete agreement has hitherto been delayed by the late Professor Gregory's unfortunate and untenable theory of solifluxion which is very properly demolished by Mr Eckford. Let us now cease to argue these fundamental points, and proceed with the superstructure—that of determining their date and the people who are responsible for having made them.

To this end it will be necessary primarily to collect the factors which are common to all groups, particularly in regard to evidence of occupation in the immediate neighbourhood ; Mr Eckford's observation *re* the forts and fortalices is a case in point, but something in the nature

---

* The blurring of this photograph is due to its having been taken from a moving charabanc—the only chance of getting it at all.

of vanished manors (or their northern equivalents) should also be sought for.

Without desiring to prejudge the issue, it may be worth saying that these terraces are extremely unlikely to antedate the Anglian conquest. We know, both from Grassington[13] in Yorkshire and Housesteads[14] in Northumberland, what Romano-British cultivations in the north of England were like. At Housesteads the Romano–British lynchets were overlaid by a series of strip-lynchets of the class we are considering, thus giving the *terminus a quo* for the latter. Also, it is probably correct to say that these strip-lynchets are confined to the area of Anglian conquest in the north, though similar strip-lynchets are found in southern England, especially in Wessex. This does not necessarily imply that they are Anglian in date, for they may well be much later, though Dr Raistrick and Miss Chapman attribute the very similar Yorkshire examples to the seventh–ninth centuries.[15] Mr Eckford says that in the Purves Hill group (Peeblesshire) ash trees grow on the slopes of the lynchets, while the flats of the terraces are bare. This is a very strong argument for a comparatively recent date for that series of cultivations. In the present writer's experience bushes, hedges and trees are by no means stable landmarks when considered over long periods of time, for the old trees die off and the seedlings spread. If, therefore, anything in the nature of an overgrown hedge is found *in situ*, its age cannot well exceed one or at most two generations of that kind of tree. In Sussex, bushes are entirely independent of Romano–British field-boundaries.

Large areas of the border hills are covered with the ridges of former cultivation, which invariably run up and down hillsides, not along them. Whatever may be the date of these ridges (Napoleonic War ?) the strip-lynchets are clearly something quite distinct and represent a different habit of ploughing. Moreover they only occur sporadically in a few sites. Any theory as to their date must take these facts into account.

### Ridges in the Western Islands

During a holiday in some of the Western Isles of Scotland in 1929, the writer observed that in many places every available square yard of certain portions of rocky and hilly islands was covered with ridges and

---

[13] Antiquity, II, 168–72 ; III, 165–81.
[14] Ibid. V, 351–4.
[15] Ibid. III, 181.

furrows indicating former cultivation. This was notably the case on the eastern part of Kerrera, opposite Oban, and over a very large part of Iona, including the slopes of the rocky hill, Dun-I. Even on the lonely and uninhabited Lunga, one of the Treshnish Isles, walled round by mighty cliffs and now the home of innumerable seabirds, a small square field was found, covered with these same ridges.

Each ridge is on the average about 6 to 10 feet wide, but the length varies in accordance with the space available between rocks. Those on Lunga are artificially limited to 135 feet in length. On the flat parts of Iona they are quite long (unfortunately we did not think of measuring them at the time), but up on Dun-I we found a group of three parallel ridges only 18 feet long, with outcrops of rock at each end, showing that they could never have been formed by ploughing, but by some kind of digging. Enquiries among the inhabitants as to their origin and history met with little success, but one boatman at Iona attributed them to the use of the caschrom, or Highland foot-plough, described and illustrated in a former article in ANTIQUITY.[16] In this he was probably correct, for the ridges illustrate very clearly the description of the agriculture of the Western Highlands and Islands given in the *Statistical Account* in the eighteenth century, in which the caschrom is stated to have been in universal use.[17] The ridging, which was done for the purpose of draining the ground, must have been accomplished by turning the sods, year after year, away from the furrows and towards the centre of the ridges, the effect of which would be very literally cumulative. The caschrom would be quite capable of doing this, for though it is only an improved digging-stick, it nevertheless makes a furrow and turns the sod over to the crofter's left as he works backwards, up the slope of the hill.

The number of these ridges indicate a considerable population in districts now sparsely inhabited. Probably they are not much, if at all, later in date than the end of the eighteenth century, though the system may go back much earlier.

The above will serve as illustrations of the abundant field-work that is waiting to be done both in Britain and in neighbouring countries before we can hope to obtain a comprehensive view of the development of field-systems—both geographically and chronologically.

---

[16] I, 261, 269.
[17] *Stat. Account of Scotland*, VI, 288–9 (1793).

## Addendum

Since writing this article I have read the informative paper by Mr G. W. B. Huntingford on 'Ancient Agriculture' printed in the June number of ANTIQUITY, and noted his helpful criticisms of some remarks of mine on Prehistoric Agriculture in volume 1 (1927), 261–89.

Most of his criticisms I am prepared to accept, particularly that which concerns the ability of Roman ploughs to turn over the soil. It does not, however, necessarily follow that Romano–British agriculture was abreast of that in Italy. Evidence of *ridging* in Romano–British fields is extremely rare: Mr Crawford has shown me air-photographs of two such sites, one near Purbeck, and one on Charlton Down, Wilts. The vast majority were definitely not ridged. Most Celtic lynchets may have had their formation accelerated by turning the sods downhill, but they can scarcely have been formed intentionally, as they produce no advantage, but rather the contrary. The slope of the hill is not materially affected, while the area of the plot is slightly reduced thereby, and a strip along the upper edge is rendered relatively infertile by the negative lynchet formation. The suggested origin of square and strip acres is based rather on primitive tendencies than on developed practice, aided by the notorious conservatism of agriculture. I do not believe that cross-ploughing was practised in Britain, but it may have been by those who first invented the square acre, wherever that may have taken place. Similarly those who invented the strip acre broke away from the square tradition for definite reasons, chiefly consisting of the possession of larger and more effective ploughs and larger teams of oxen which made possible longer furrows and therefore narrower plots, and less time wasted in frequent turning of the plough.

Mr Huntingford's account of Nandi agriculture coincides closely with my own conception of neolithic agriculture in this country.

# Bee-hive Dwellings of Apulia

by Lancelot G. Bark

ANY traveller in South Italy who finds himself in that tract of bleak and desolate country which is intersected by the Bari-Brindisi railroad, will not fail to observe many odd-looking structures in the fields. At a distance they appear to be quaint little conical-shaped huts, some 8 or 9 feet in height, fashioned after the manner of round bee-hives, and composed of flat stones, loosely piled together. They are used, so the natives will explain, as shelters for the cattle, as barns, or as store-houses for the fishermen's nets.

But further enquiry will elicit some stranger information about them—to the effect that these structures date from time immemorial, and that they are called ' trulli ', although nobody seems to know the reason why, or what the term really means. The traveller will also be told that if he is enterprising enough to make the adventure into the remoter parts of Apulia, he may see a whole city of 'trulli', a city of some 12,000 souls, who live in what must surely be regarded as among the strangest human habitations on earth.

The idea attracted me : I would see this city, although the way was said to be toilsome and the scenery unattractive. For the low range of hills which form the southeast termination of the Apennine range must first be traversed before one gains the high-road to Alberobello—such is the name of the city. But that range having been crossed a new world comes into view. It is a veritable world of stone. On every hand, stone in embarrassing profusion. Piles of stone along the road sides ; piles in the corners of the fields ; the walls between the fields built to a thickness which would serve for the walls of a city ; the very fields themselves streaky with white ridges of limestone as far as the eye can reach. Stone, and stone of a particularly fine quality, everywhere.

Nature has been not only prodigal in the quantity, but thoughtful as to how her gift should be bestowed. For the stone is generally in the form of small flat slabs near the surface of the soil, easy to retrieve, and easy to manipulate.

Away in the distance another trullo is visible, and yet another. They seem to be larger than those seen from the railway, though similar in pattern. Smoke is ascending from a tiny chimney in the roof of one of them. No stables or barns are these. We have arrived in ' trulli land '. These trulli are human habitations.

Another few miles and Alberobello is reached. It is a city which produces an impression without parallel. It is unreal and wildly fantastic. For Alberobello consists of street after street of trulli. It is a veritable forest of stone bee-hives, or perhaps hay-stacks would be a better simile, as many of them are from 15 to 20 feet in height.

With the aid of a friendly old peasant I was enabled to make an examination of several specimens. My peasant was a native, although he had lived many years in what he called ' Noo Yark ', and had now returned to the scene of his birth, and appeared to be regarded as a sort of chieftain of the tribe. His own house was a typical example. About 20 feet in height, the walls built of flat slabs of limestone to a thickness of 7 feet, stacked one on top of the other, with neither mortar nor cement. From the top of the door upwards the roof contracts and gradually assumes a conical shape up to its summit, the topmost peak being crowned with a rude lump of cement by way of ornament. Inside, the dwelling was divided into two unequal sections, thus forming a living room and a bed room, the walls being covered with plaster to keep draughts out. A solitary fireplace stood in the centre : there was no flue for the smoke. The house possessed but one door and no windows.

It will be observed from this brief description that architectural laws are frankly set at defiance, and I was unable to perceive how the structure was kept together in the absence of mortar or cement, and apparently with nothing by way of a keystone in the roof. My friend explained, and showed me on his own roof how the stones were laid in circular fashion as the roof ascends, everyone wedging its neighbour. Thus each stone is virtually a keystone.

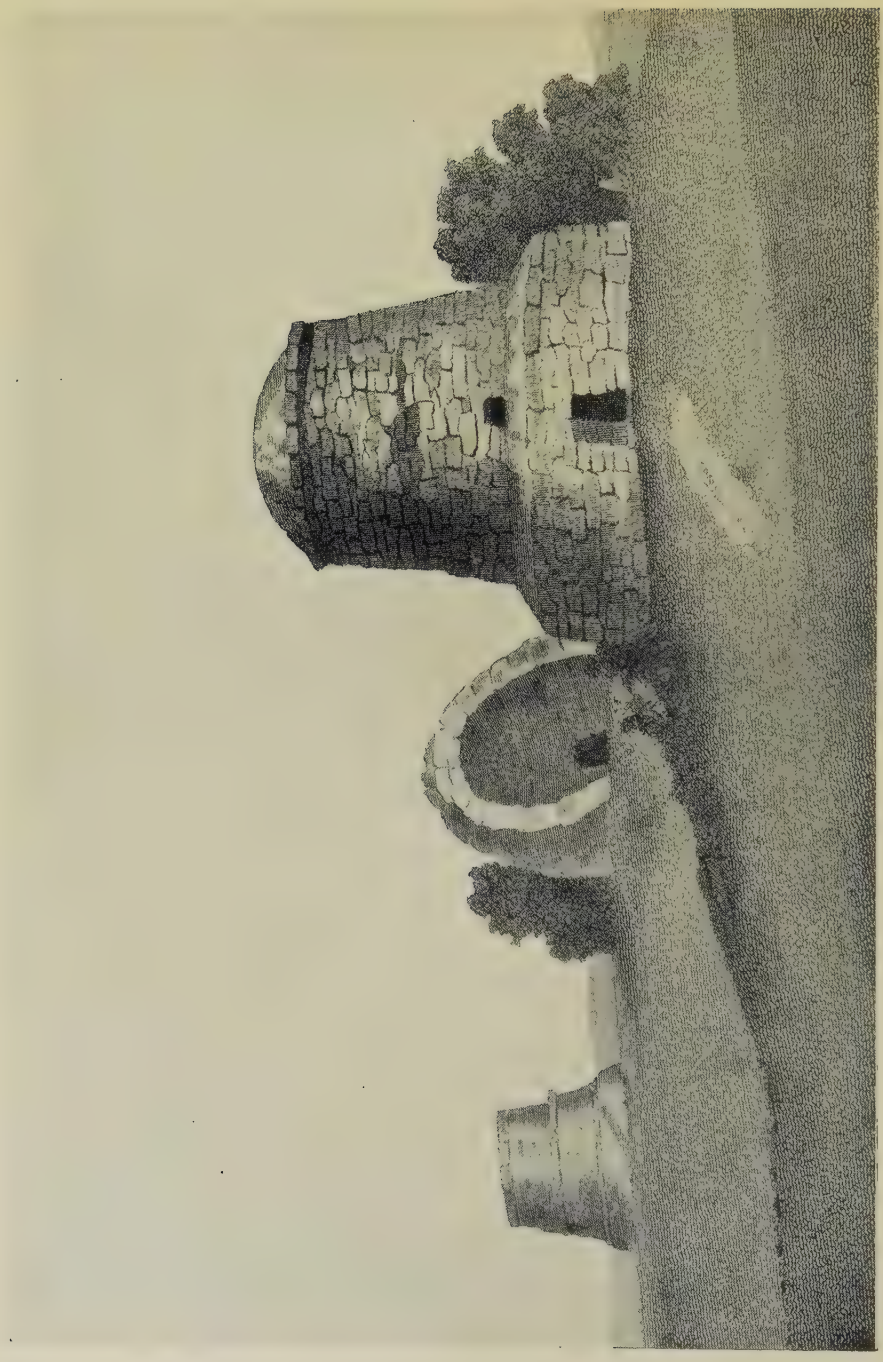
As we wandered down the ' main street ', followed by a wondering crowd, for a visitor is a rare event in Alberobello, the old man answered my many questions. He assured me that these strange dwellings, dating as they do from time immemorial—for they seem to last for ever—were not constructed thus for purposes of defence, as some writers have supposed. They are what they are simply because their builders found it necessary to rid their land of stone before they could cultivate the soil. They built in a way which would use as much material as

PLATE I

'WINTER HUTS ON THE SHORE OF THE ADRIATIC'
*From an old book of travel, probably 18th century*

*facing p.* 408

PLATE II

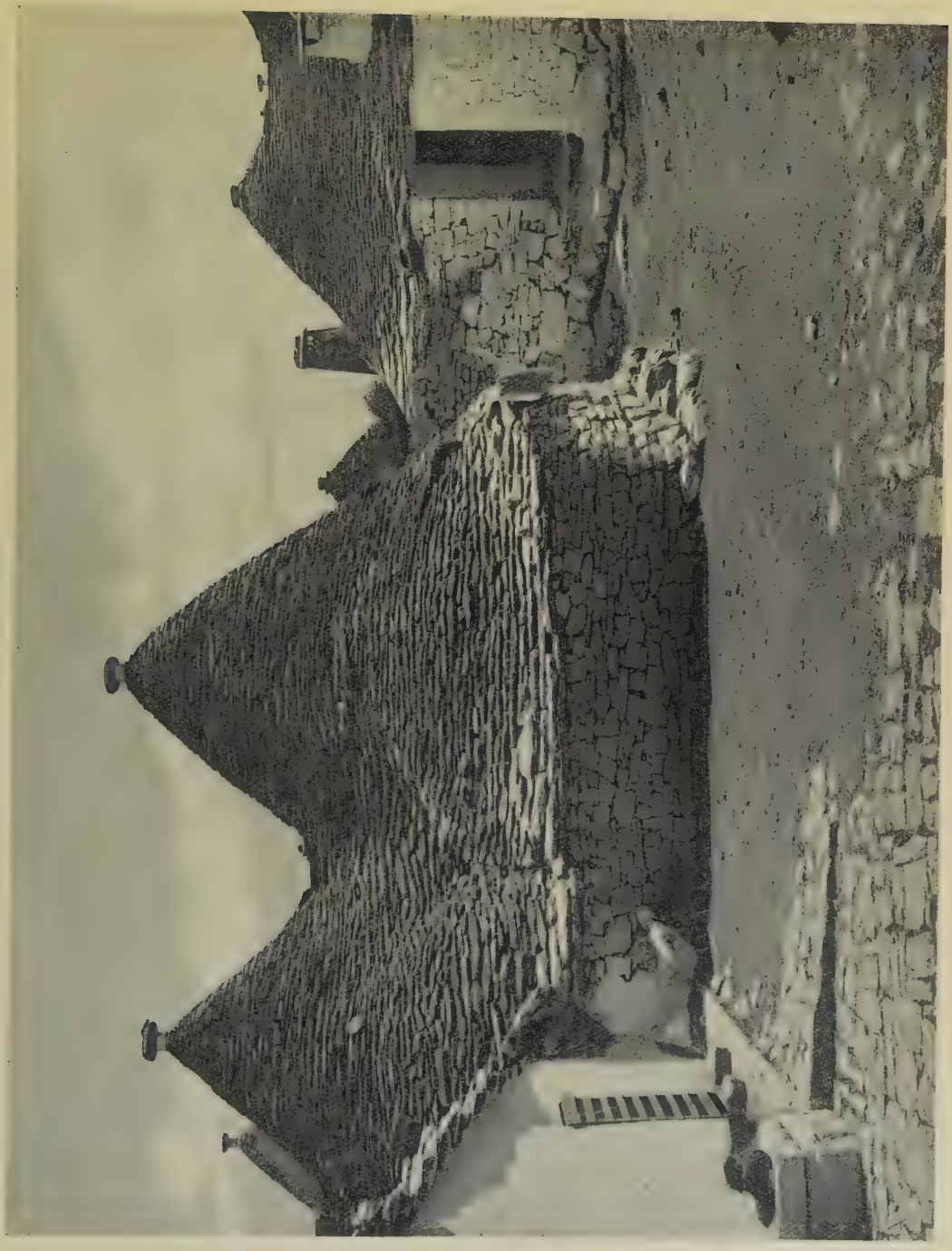


'WINTER HUTS ON THE SHORE OF THE ADRIATIC'
*From an old book of travel, probably 18th century*

'TRULLI' DWELLINGS, ALBEROBELLO, ITALY
Pls. III-VI, pp. Alinari

'TRULLI' DWELLINGS, ALBEROBELLO

PLATE V



A 'TRULLO', ALBEROBELLO

PLATE VI

GENERAL VIEW OF ALBEROBELLO

possible. Walls of 7 or 8 feet thickness are a convenient way of disposing of a surplus, said he. Such economical houses, too, he added, for the material costs nothing, not even the expense of carting, for the builder is sure of finding stone wherever he may wish to build. And by building, he is helping to clear the land, and thus placing more of the rich soil at his disposal for cultivation. Construction costs nothing but time, for each peasant builds his own trullo, with the aid of his neighbours if need be. Architects and masons would fare badly in Alberobello. I learnt that the town possesses neither.

Some interesting variants appeared as we wandered along. I saw a few trulli of more recent construction which consisted of two stories, access to the top floor being gained by a ladder fixed to the wall. Cellars also had been provided in some cases—deep, roomy cellars, cleverly fitted with partitions for wine and oil. One owner had a diminutive trullo adjoining, which housed families of white rabbits and chickens. In no case did I see an instance of more than one door, nor what could fairly be described as a window, although a few possessed holes in the walls some 15 inches square, left open in the summer, to be closed with stones in winter. The inhabitants all assured me that a trullo is an ideal dwelling, in that it is cool in summer and conserves the heat in winter—a most important factor in a land where coal is unknown, and wood scarce.

The builder of a trullo has little opportunity to express individuality; indeed it is only into the question of decoration that personal taste can enter. Many of the houses are adorned with paintings above the door—vivid scenes from the Bible or local history, such as are to be found on the carts in Sicily. The apex of the roof is another spot where the artistic builder lets himself go, the lump of plaster which is the normal terminal being often varied by a sphere, a cross, an inverted jar, or, as in one instance, by the image of the patron saint of the family who dwell below. But as nature has provided the material wherewith to build the trullo, so it is the same kindly nature who has added the most fitting adornment. For in course of time those mortarless stones have become receptacles for soil and seeds driven in by the winds. The rain and the sunshine have done the rest, with the result that most of the trulli possess charming roof-gardens, aflame with masses of wild flowers, a delight to behold.

Scientific investigation seems to have little to add to what the natives know already about their extraordinary town. The distinguished Italian antiquary, Prof. Giuseppe Grassi, describes it as 'extremely

ancient and certainly pre-historic ', and his compatriot Prof. Bertacchi declares the trullo to be ' a survival of the remotest period '. As for the word itself, its origin has not been satisfactorily determined. It may be, as some think, that it has some affinity with ' trullus '—the domed chamber in the ancient Byzantine palace at Constantinople which is certainly after the same pattern—but in view of the undoubted prehistoric origin of Alberobello, this derivation seems fanciful and unlikely. Better, I think, fall back on the explanation given by my native rustic : ' The word means, well, it just means what you see here ' —and his guiding hand described a complete circle.

It is painful to have to add that modern ' civilization ' has reached Alberobello. No one will grudge it the blessings of electric light which it now enjoys like every other Italian town and village. And the recent arrival of a branch of a well-known firm of sewing machine manufacturers will doubtless be of service to the women, who have long been famous for their skill at needlework and weaving. But one cannot but regret that the ' High Street ' of Alberobello already boasts of a cinema and is threatened with another. I like to think and believe that long after those cinemas have decayed to dust ; ages after those sewing machines I saw being unswathed from their wrappings have gone to that limbo which awaits all sewing machines, Alberobello and its trulli will still remain as the permanent monument to the industry and skill of those prehistoric builders who had to build before they could plant, and who by their building enriched the world with a city at once fantastic and unique.

# Dogs

by Dr Max Hilzheimer*

I DO not intend in this paper to give a complete history of the dog, but simply to discuss certain problems connected with it, and in particular to describe a number of types belonging to different periods and countries.

Our evidence is for the most part pictorial ; yet it must be used with caution, for difficulties are bound to arise if animals are represented

Fig. 1. MALTESE DOG, VASE FROM VULCI
(*Zeitschrift für Hundeforschung*)

alone, with no clue to their size. For example, figure 3 shows representations of dogs on coins from Panormus of the 4th century B.C.[1] ; artistically they are excellent, but nothing can be inferred as to breed, for this depends on the size, of which we know nothing. On the other hand, figure 1, although artistically crude, not only tells us the size of

* This article originally appeared in German in the *Zeitschrift für Hundeforschung* (Berlin), April 1931, pp. 3–14, and is printed here by permission of the Editor and the Gesellschaft für Hundeforschung. It has been translated, with annotations, by Roland G. Austin, of Glasgow University.

[1] See Imhoof-Blumer and O. Keller, *Tier- und Pflanzenbilden auf Münzen und Gemmen des klassischen Altertums.*

the dog relative to the man beside him, but also that the animal is of Maltese breed[2] (ΜΕΛΙΤΑΙΕ). This is in fact the only instance in antiquity where a breed can be definitely ascertained, for even when descriptions are given of classical breeds, they are as a rule thoroughly unsatisfactory and establish no certain conclusion.

I believe that all breeds of dog, with the single possible exception of the Egyptian and its derivative the greyhound, have been evolved ultimately from the wolf. From the skull-formation of different dogs one can recognize a point of arrested development at different stages of growth. Figure 4 shows three stages in the skull-development of the sheep-dog, illustrating the difference between the new-born puppy and the mature animal—a difference so striking that no one could imagine both to belong to the same breed were the two skulls found independently with no knowledge of their relationship. It can be seen that the skull of the month-old dog resembles that of the full-grown toy terrier, while at 6 months it is more like that of the pomeranian or the terrier. When completely developed it reaches a stage through which the mastiff has to pass before attaining maturity ; and the fully-grown mastiff in its turn corresponds merely to one of the earlier stages of the wolf, which develops to a proportionately higher degree.

No domestic dog or breed betrays the fox in the shape of its skull ; for in this respect the fox and wolf differ completely. In fact the fox has no place in the genealogy of the house-dog, even though many dogs are superficially very like foxes.

If the wolf is the ancestor of the domestic dog, an accurate knowledge of his build is of the greatest importance in the case of dogs broken in for use (*Gebrauchshunde*). The wolf is the most completely developed type of the trotting dog ; no dog can outstay him when he trots. He is remarkable for his sharp-cut hindquarters, his long flexible spine, the firm set of his shoulders, and his keel-shaped breast with its slight development in point of depth. Owing to the narrowness of the shoulders the elbows are turned well inwards ; thus it happens that the radius-bone reaches forward and outwards, and so he trots very powerfully, with the hinder feet always keeping to the tracks of the corresponding forefeet, unlike the dog, whose hinder tracks are to left or right of those made by the forefeet. Another indication of

[2] These dogs, referred to by Strabo (VI, 277) as τὰ κυνίδια ἃ καλοῦσι Μελιταῖα, were frequent domestic pets; see Daremberg and Saglio, *Dictionnaire des Antiquités*, s.v. *bestiae cicures*, figs. 834 and 840, and fig. 1113 s.v. *canis*.

the tireless runner is the strongly developed nose with its straight bridge and the sloping brow (fig. 5).

The Australian dingo is another type of wild dog; he stands some 40–50 centimetres high at the shoulders, and is usually of a reddish colour. But it is open to doubt whether he was really wild in origin. Apart from certain mice and bats, which may have reached Australia on driftwood or by flying, there are no taller mammals to be found there, and it is therefore thought that immigrants were originally responsible for the introduction of the dingo and that he became wild later. There is much to be said for this opinion, for the dingo is definitely a dog in build, even though he has the rather long back and tiny slit eyes of the wild dog. However, dingo bones have been found along with those of extinct beasts of prey, so that there is at least some support for the view that he is a genuine wild dog.

Studer is the chief exponent of the theory that a smaller type of wild dog must have existed south of the zone where the wolf is found, and that its habitat possibly extended to Australia; but so far his view lacks proof, unless the pariah dogs, so numerous everywhere from Morocco to Japan, are to be considered as descendants of such an animal.

Here again we come to a difficult problem: is the pariah a wild dog raised to the status of a domestic dog, or is it rather a runaway domestic dog which has become half-wild? I prefer the latter view. For pariah dogs are found nowadays in countries which had reached a high cultural development in antiquity, yet nothing is heard of these animals at that time. On the other hand it must be remembered that it was precisely these countries which were overrun and laid waste by invading peoples at the dissolution of the ancient world; it is therefore possible that many dogs then became homeless and turned pariah. If I am right in assuming that the pariahs have evolved from a casual cross-breeding of very different types, we might perhaps discover in them a prototype of a dog (*Urtyp*) in much the same way as Darwin, by crossing different breeds of domestic pigeon, discovered its racial ancestor, the wild rock-dove. The pariahs are thus of greater interest, and it is regrettable that their origin has never been carefully investigated; in fact there is grave danger of their becoming extinct before any such research can be made. In spite of their similarity, different types may be recognized among these pariah dogs. They are of a medium size, standing about 50 centimetres high, usually of a reddish or yellowish colour; they vary from being smooth to wire-haired,

with long muzzles, sloping brow, erect ears with the points often drooping, and the tail more or less tightly curled. In build, they range from a very heavy, lumpish pomeranian to the hound or sheep-dog types, which can even approach very nearly to the light build of the greyhound.

In this way these types represent so to speak a primitive stock such as that from which permanent types not unlike our hounds and sheep-dogs could have evolved. Studer, in his *Canis familiaris putiatini* from the Russian Campignian, claims to have found a common ancestor for both of these (the Campignian period follows the Azilian, which

Fig. 2. FRESCO (HELLADIC III) OF BOAR-HUNT AT TIRYNS
(*Zeitschrift für Hundeforschung*)

may be placed immediately after the Ice Age). Although his *Canis familiaris putiatini* has lately been again subjected to scepticism, there is no doubt of the close connexion between the hound and sheep-dog. Figure 6 shows a dog from Tripoli, which happened to be exhibited in an international show at the Berlin Zoological Gardens ; from it a clear idea can be obtained of their common ancestor. I find it difficult to find a place for this dog in any modern system of classification of domestic dogs, whereas his type appears to me to be frequently represented in ancient mural paintings and on vases. For instance, he is exactly like the dogs in the fresco of a boar-hunt at Tiryns, dating from about the 14th century B.C. (fig. 2). Clearly the breed spread over the eastern Mediterranean, and has remained quite pure in Tripoli down to the present day.

While the hound and the sheep-dog belong to a relatively recent period, two other breeds occur in the oldest strata containing evidence of the domestic dog—the kitchen-middens of the Baltic and North Sea coasts, which in geological terms belong to the immediately post-glacial period, and culturally correspond to the Azilian period.

Of these, the larger and older so obviously resembles the wolf in its skull-formation that there can be no doubt of its descent, especially since other remains have been discovered which according to Brinkmann may belong to a domesticated wolf. This is the *canis familiaris Inostranzewi*, which is thought to be the ancestor of the great mastiffs and shepherd-dogs, and which Brinkmann has shown to have a living representative today in the Norwegian elkhound. The breed early spread southwards from the Baltic coast, their original home. Thus in Babylonian art about the close of the 3rd millennium B.C. we come across a gigantic mastiff about 80 centimetres shoulder-high (fig. 7).[3] Today a quite similar breed seems to survive in Central Asia; in 1930 at the international fur-trade exhibition I saw an animal among the Turkestan shepherd-dogs which reminded me at once of the early Babylonian mastiff. Of course there were other examples of these dogs, smaller and slighter, showing that the breed is not so entirely stabilized as those systematically bred in countries with a high degree of culture. So that it is not surprising that in ancient Mesopotamia there were also smaller dogs 60 to 70 centimetres shoulder-high, used for hunting and perhaps for purposes of war as well. In the first half of the first millennium B.C. dogs were employed in campaigns all over western Asia and Greece; figure 8 shows them in action (war-dogs of Assurbanipal from the palace of Nineveh, about 650 B.C.). Herodotus[4] recounts that when the Perinthi were attacked by the Paeoni on the Propontis, 'man was matched against man, horse against horse, dog against dog'. The same use was made of dogs by other nations also, and no doubt the breed employed varied with the respective peoples. The Assyrian war-dogs appear very different from the animal represented as accompanying Hecate on the frieze from Pergamum (figure 9;

[3] This is now in the British Museum and is described there as a hunting-dog; cf. W. Houghton, in *Trans. Soc. of Biblical Archaeology*, v, 53; Birch, *History of Ancient Pottery*, I, 147.

[4] Herodotus v, 1; cf. Aelian, *de natura animalium*, vii, 38, where the Magnesians and Hyrcanians are said to have the same custom; Aelian adds that an Athenian soldier took his dog into action at Marathon, and that the two together were depicted in one of the paintings on the Stoa Poikile.

first half of the second century B.C.), a shaggy hound with short muzzle and ears erect, biting a giant on the leg. The Gauls clad their war-dogs in armour, with broad spiked collars. The Romans, however, did not employ dogs for purposes of war, although as Vegetius[5] tells us, writing about A.D. 400, they kept numerous dogs in their watch-towers on the *limes*, to bark on the approach of enemies. Dogs were also used for carrying messages, with letters attached to their collars.[6]

Egypt is the most southerly point reached by this mastiff-type in prehistoric times. We can trace them in the period of the first dynasty, about 3000 B.C. They probably accompanied nomad foreign tribes thither, and soon became extinct from lack of further stock. They must have resembled the huge Babylonian dog, from which they were most probably descended, and were not much smaller than the lions often depicted with them.

The great shepherd-dog (*Hirtenhund*) is also usually connected with the short-haired mastiff type mentioned already. Care should be taken not to confuse him with the sheep-dog (*Schäferhund*). The former were used not for taking the herds to and from the pasture, but in order to keep guard against robbers of all kinds, human and animal.[7] The latter type as we know it can only have been evolved after the gradual disappearance of great beasts of prey, more especially the wolf, and when the spread of agriculture necessitated the 'watch-dog' in the modern sense. There is no proof of such sheep-dogs in general use before the 17th century, when they first appeared in England as the wolf became extinct.[8] For although the zoological category of 'sheep-dog' is known to have existed from the Bronze Age downwards, these animals originally served very different purposes, such as hunting or keeping guard.

These great shepherd-dogs may be divided into two groups. One is found south of the Alps, with long lightly waving hair (*e.g.*, the Pyrenean type or the south Italian). This breed is very ancient and is depicted in Roman works of art, being especially frequent in the Alpine districts, where it probably was the forerunner of the modern

[5] *Res militaris*, IV, 26.

[6] Aeneas Tacticus, XXXI, 32 (of the Epirotes and Thessalians). Varro (*de re rustica* II, 9, 15) recommends spiked collars (*mellum*, *millus*) as a protection for sheep-dogs; cf. Rich, *Illustriertes Wörterbuch der römischen Altertümer* (1862), p. 395.

[7] *i.e.*, the *canis pecuarius pastoralis*; thus Plato (*Rep.* 416A) speaks of them as ἐπίκουροι ποιμνίων; cf. Daremberg and Saglio, s.v. *canis*, figs. 1118 (bas-relief from the Capitol), and 1119 (Greek vase, Musée de l'Ermitage).

[8] cf. J. E. Harting, *British animals extinct within historic times*, pp. 115–205 (the wolf).

# PLATE I

FIG. 3. COINS FROM PANORMUS, 4TH CENT. B.C.
(*British Museum*)

*facing p.* 416

# PLATE II

FIG. 4. STAGES OF SKULL-DEVELOPMENT

A. Wolf, full-grown. B. Sheep-dog, full-grown. C. Pomeranian, full-grown. D. Sheep-dog, 6 months. E. Toy-terrier, full-grown. F. Sheep-dog, 4 weeks. G. Mastiff, full-grown.

(*Zeitschrift für Hundeforschung*)

# PLATE III

FIG. 5. RUNNING WOLF
*(Verein für Deutsche Schäferhunde, Augsburg)*

FIG. 6. TRIPOLITAN DOG
(*Zoological Gardens, Berlin*)

FIG. 7. MASTIFF, BABYLONIAN RELIEF, c. 2200 B.C.
(*British Museum*)

Fig. 8. WAR-DOGS OF ASSURBANIPAL, PALACE OF NINEVEH, *c.* 650 B.C.
(*British Museum*)

Fig. 9. ASSYRIAN WAR-DOGS, FRIEZE FROM PERGAMUM, 2ND CENT. B.C.
*(Direktion des Pergamon-Museums, Berlin)*

FIG. 10. EARLIEST REPRESENTATION OF EGYPTIAN DOG, PRE-DYNASTIC
*(Zeitschrift für Hundeforschung)*

PLATE IX

FIG. 11. EGYPTIAN GREYHOUND, GRAVE OF PTAHHETEP, SAKKARA, *c.* 2500 B.C.
(*Zeitschrift für Hundeforschung*)

FIG. 12. IBIZAN GREYHOUND (BALEARIC ISLANDS)
(*Zoological Gardens, Berlin*)

FIG. 13. EGYPTIAN RACING HOUND
*(Ashmolean Museum)*

FIG. 14. LONG-BODIED EGYPTIAN BITCH, FROM BENI-HASSAN, *c.* 1900 B.C.
Drawing by Percy Buckman
*(Egypt Exploration Society)*

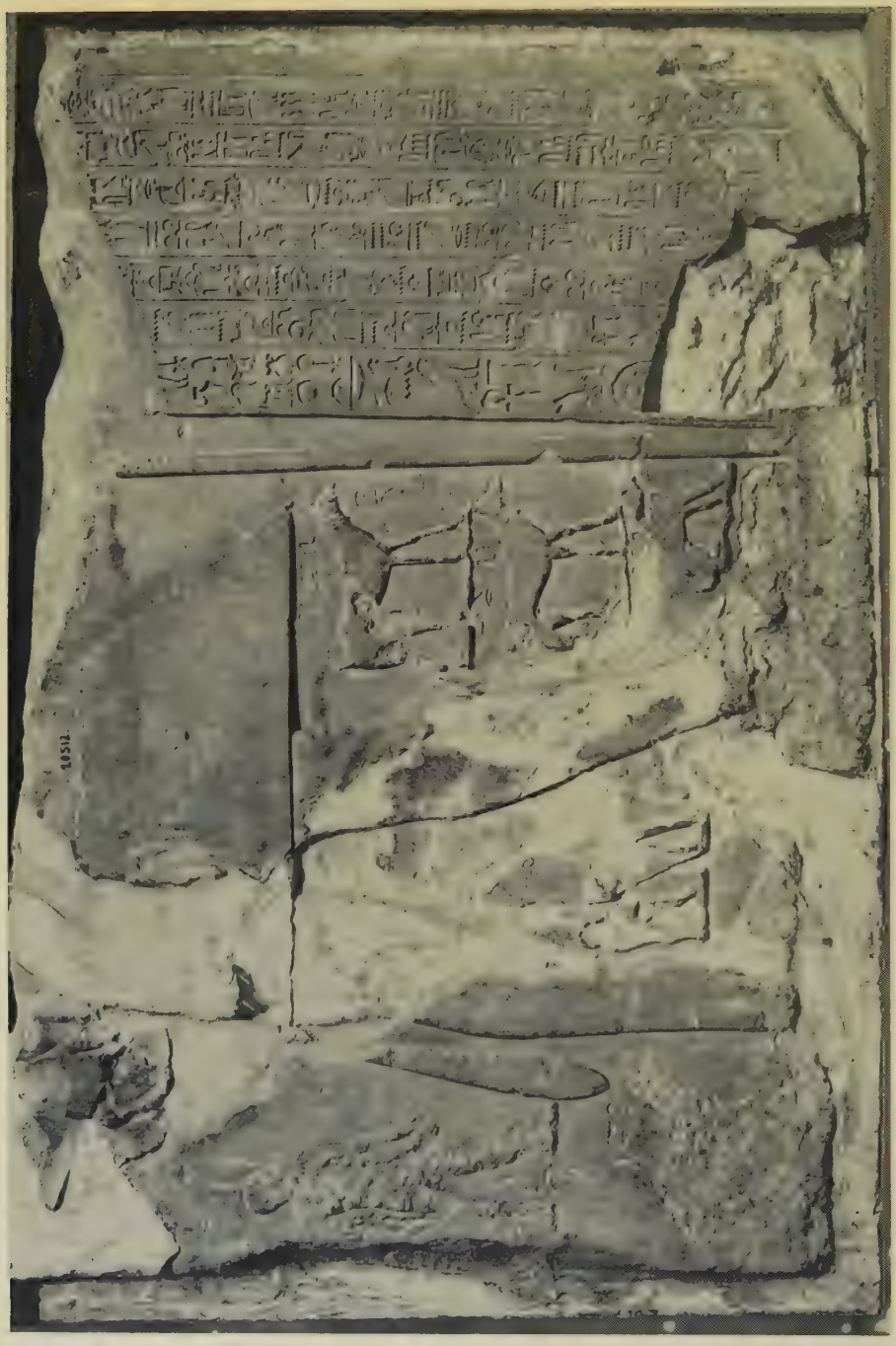


FIG. 15. STELE OF KING ANTEF, WITH HOUNDS, *c.* 2100 B.C.
*(Cairo Museum)*

St. Bernard dog. The second group belongs north of the Alps, with tight corkscrew-like curly hair, resembling the Oftscharka, the old German sheep-dog from Pomerania, and the Bobtail. The prevailing colour among these dogs is white, if not pure white.

From several considerations it is erroneous to connect this breed with the so-called Tibetan dogs, which are mostly black or black with black-and-tan markings, and so, apart altogether from their skull-formation, very different in appearance. We know little about this breed. Its various representatives, shown in Europe during the last seventy years, offered a variety of types, and nothing is known of their history.[9]

A second group of dogs, dating back as far as that of the mastiff-type, comprises the fox-terrier and his close relation the terrier. Their earliest representatives occur in the Azilian period on the coast of the Baltic and North Sea. They seem to have spread over the world quite early, the more because they can resist climatic conditions, especially hot temperatures, much more than the others. They had reached South Africa and had spread over the Polynesian islands before their introduction into Europe. In the early Stone Age they make their appearance in the prehistoric lake-dwellings of Switzerland, and about 3000 B.C. may have reached Mesopotamia, as shown by a seal of the period, on which there is an undoubted representation of a Pomeranian; this by the way is the only illustration of a dog of this group known to me from ancient Mesopotamia.

These dogs do not seem to have reached Egypt so early. The earliest representation of an Egyptian dog occurs on a pot belonging to the pre-dynastic period, dating from about the fourth millennium B.C. (fig. 10). It depicts a man with four dogs on a lead. From their build the animals can only be greyhounds, of the size of whippets, with the erect tail characteristic of their kind. They are probably to be considered as representatives of that type of greyhound later so highly bred in Egypt, which were called there Tesem (fig. 11, early Egyptian greyhounds from the grave of Ptahhetep at Sakkara, belonging to the fifth dynasty, about 2500 B.C.). We possess many illustrations of these Tesem greyhounds from the whole period of the Egyptian supremacy, some 3000 years, and much care must have been taken to

[9] O. Keller, *Die antike Tierwelt*, suggests that these were the 'Chinese' dogs mentioned by Gratius, *Cynegetica* 159 (sunt qui Seras alant, genus intractabilis irae); he states that according to Chinese chronicles one of these Tibetan dogs was presented to the reigning emperor in 1121 B.C.; but there is nothing to show that they originated in China. (Keller, p. 108–9, where there is also an account of the Indian dog).

keep them pure-bred. They are always depicted with long, pointed, fine heads, ears stiff and sharply erect, and a tightly-curled tail like that of a pug. According to Egyptian ideas this curly tail must have formed a sign of good breeding, for it is always carefully represented in all works of art, often to an exaggerated degree. Obviously the Egyptians were especially proud of this characteristic, quite unnatural in a greyhound, who needs a long tail to guide himself ; it must therefore have been extremely difficult to obtain by breeding. This breed has died out in modern Egypt, but is still extant in Crete, the Balearic islands, and Pityusa, as Conrad Keller first pointed out. Here the island of Ibiza is the chief breeding-centre. The Spaniards have lately introduced this 'Mallorquin' or Ibiza greyhound to the Canary Islands, and the Berlin Zoological Gardens possess at the moment a male and female specimen, presented by the well-known traveller Spatz (fig. 12). In several respects these dogs appear to me unlike the original Egyptian type of greyhound in build. I imagine the latter to resemble the Borzoi-type ; the back of the Borzoi has a much more pronounced curve, and the proportion of upper hind-leg to lower, and similarly that of upper and lower foreleg, seems to me to be different. This would have to be ascertained by investigating the bone-structure. But in particular the skull-formation of the two seems to differ completely. The head of the Balearic greyhound appears remarkably hollow in front of the eyes. In this way, and not only because of the peculiar square-shaped erect ears, the head is entirely different from that of the Eurasiatic greyhound. This is best seen from the profile : in the latter type the part before the eyes is more or less convex, in the African dog unmistakably concave. Of course, this conformation has nothing to do with a higher development of the brain, but depends upon the hollows of the brow, which extend from the nose to the frontal bones. I have proved the same peculiar skull-formation to exist in early Egyptian mummified dogs, which I should like to think belong to the Tesem breed. On the other hand these mummified skulls correspond very closely to one of the three Egyptian types of jackal, the *canis lupaster*. Further, as we have seen, these greyhounds are of great antiquity in Egypt, and appear to have existed at a period when there is no trace of the greyhound in Asia or Europe ; and I believe therefore that the Tesem represents a very ancient Egyptian breed. My opinion is strengthened by the fact that the ancient Egyptians were complete masters of the art of domestication, and tamed a large number of animals which were not so elsewhere.

Besides these greyhounds, there appears to have existed quite early in Egypt another breed of racing dog, which can be proved to go back at least to before the first dynasty. These dogs had long, thin legs, small floppy ears and sword-like tails ; figure 13, an ivory figure from Hieraconpolis dating from the end of the 4th millennium B.C., gives a good idea of their appearance. The breed continued throughout the whole period of the Egyptian supremacy and is well attested by many works of art, though we do not know its name.

At a later period, especially in the new Empire, a large number of types made their appearance, which are not always easy to describe in detail, and may partly have been mongrels. Attention has been especially drawn to a type of low-slung dog with erect ears ; his straight legs notwithstanding, he has been thought to be the ancestor of our dachshund, and an attempt has even been made to base this claim on linguistic grounds. In the 11th dynasty (about 2100 B.C.) King Antef is represented with his dogs (fig. 15), and against these is written a word which has been read as *tekal* ; this word has been identified with the low German word for dachshund, *teckel*. Nothing can be further from the truth than this derivation. Granted that the ancient Egyptians had a word *tekal*, even with the most reckless philology it could not be connected with the low German *teckel*. However, the word in the inscription is actually *trqu*, which means something hot or fiery, and must therefore be the name of the dog and not a designation of its breed. Apart from the fact that the four dogs of King Antef, each of which has another name, are especially lean and long-legged, they resemble the greyhound in type, perhaps even the racing type, but in no case the Dachshund (*v.* fig. 15). There is nowhere any name attached to representations of these low-slung long-bodied dogs, as they appear for example in those from the buried Egyptian city Beni-Hassan (fig. 14, dating from the 12th dynasty, about 1900 B.C.).

As for the descent of the dachshund, in my opinion it is an entirely German breed, which sprang up about the time of the Roman empire in that part of Germany which was under Roman domination. In every Romano–German settlement belonging to that period which has yielded remains of domestic animals—and I have investigated a large number—I have found remains of the dachshund. Other researches may have led to the same discovery. As they are so far not known from earlier cultural strata or in other localities, my conclusion seems to be well founded: that Germany is the cradle of the dachshund, and that it must be regarded as an ancient German breed.

# Alleged Norse Remains in America*

by G. M. Gathorne-Hardy

THE discovery of America by the Norsemen in the early years of the eleventh century is now one of the accepted facts of history. While considerable difference of opinion still exists as to the measure of reliance to be placed, in points of detail, upon the documents in which the discovery is recorded, and the precise localities visited are still the subject of controversy, no one who has devoted any attention to the subject entertains any doubt that the broad fact of the discovery is established. But, though this is so, the evidence has hitherto been exclusively confined to the historical narratives of the sagas, and the attempts which have been made from time to time to supplement their testimony by the production of traces of Norse occupation discovered in America itself have not only broken down, but have excited so large a measure of ridicule and suspicion that they have, rather paradoxically, been the principal reason why general acceptance of the basic fact was unduly delayed. As a natural and justifiable result, the first reaction of students of the subject to alleged discoveries of Norse remains or inscriptions in the West is one of extremely cautious scepticism.

The question has recently been revived by the publication of a work[1] which demands at the very least a serious and dispassionate consideration. Mr Holand's attempted vindication of the claims of the Kensington inscription has involved the continuous application of more than twenty years ; the objections raised by its opponents appear to be frankly and fairly disclosed and faced ; the reasoning of the book is close and forcible, and, since the issues involved are those of deliberate fraud and perjury, the problem has all the fascination of a detective story or a *cause celèbre*. In any paper devoted to reputed Norse remains in America, the Kensington Stone is the only instance deserving serious discussion, but, having regard to the atmosphere

*References to America in this paper distinguish Greenland, to which different considerations apply.

[1] H. R. Holand, *The Kensington Stone*. Ephraim, Wisconsin, 1932. 3 dollars.

created by previous allegations of the kind, it is desirable briefly to summarize the general history of the question.

It may at first sight seem surprising that the visits of the Norsemen should not have left behind them abiding monuments sufficiently conspicuous and widespread to have been discovered by this time. If, indeed, it were merely a question of the recorded voyages of Leif, Karlsefni and others in the early part of the eleventh century, there would be little reason to anticipate discoveries of this kind. Without a more precise knowledge than we at present possess of the regions visited by the first explorers, any traces which they may have left of their transitory presence might as easily escape notice as the proverbial needle in a haystack. But there is indisputable evidence of the fact that knowledge of the American discovery persisted in the Norse colony of Greenland for several centuries, and there is every reason to believe that the country was the object of frequent visits, if not of attempts at permanent colonization. The Icelandic Annals record how, in 1121, Erik, the first bishop of Greenland, sailed to Wineland (America), from which he appears never to have returned. This in itself is rather suggestive of the existence at that date of a Norse settlement on the American mainland. It would hardly be the function of a bishop to desert his diocese with the object of founding such a colony, a motive suggested by the imaginative Danish poet Lyschander in the seventeenth century; still less would he be likely at that date to attempt the hopeless task of a mission to the barbarous ' skraelings '. On the other hand, if a portion of the flock entrusted to his charge were known to have emigrated to the more congenial climate of Wineland, the motive of the bishop's journey is at once intelligible. However this may be, there can be no doubt that to a far later date connexion between Greenland and America was maintained.

In 1347, The Annals make a casual reference to the arrival in Iceland of a Greenland ship which had sailed to Leif's Markland, and the unique character of this reference is clearly explicable from the circumstance that this voyage came accidentally to the notice of the Icelanders: ships plying between Greenland and America would normally have been out of the purview of the annalists. It is, incidentally, not without importance in connexion with the problem of the Kensington stone that this crew of Greenlanders is known to have visited Norway in 1348, in company with one Jón Guttormson. A further hint of the probable existence of a more or less continuous traffic between Greenland and America is found in a list of furs stated

by Archbishop Walkendorff of Trondhjem to have been imported from Greenland. Several of these are not attributable to the Greenland fauna, and it has been therefore plausibly suggested that they may have been obtained from the American continent.

Peculiarly suggestive, though perhaps of inferior trustworthiness, is an entry in the supplementary Icelandic Annals written in Latin early in the seventeenth century by Bishop Gisle Oddson. The source of his information is not known, but it may have been derived from a record burnt in the cathedral at Skalholt in 1630, and appears in any case too circumstantial for an effort of episcopal imagination.

> 1342. Grönlandiae inhabitatores a vera fide et christiana religione sponte sua defecerunt, et repudiatis omnibus honestis moribus et veris virtutibus *ad Americae populos se converterunt*: existimant enim nonnulli Grönlandiam esse vicinam vel adjacentem occidentalibus orbis regionibus.

The last part of this entry makes it clear that the bishop is distinguishing between Greenland and what he calls America, and Nansen's suggestion that the reference is to an amalgamation with the Greenland Eskimo is therefore hardly tenable, even if it were not clear from other portions of the same document that Gisle Oddson held the prevalent view associating Greenland with Europe. That something of the kind suggested by the record may have happened to the Western Settlement, near Godthaab in Greenland, is confirmed by the report of Ivar Bardsen, who, visiting that district about this date, found the colonists departed, and their cattle running wild about the place. As Nansen observes, had Eskimo raided the settlement, they would certainly have slaughtered the cattle. Moreover the fact that the latter had survived untended in that inclement region points to the very recent departure of their owners. The apostasy of the Western Settlement, and its emigration to America about this time may therefore be considered quite probable, and it is not impossible that news of the event may have reached Norway in 1348, with the arrival of the Markland expedition. This has a bearing on the question of the Kensington stone, which will be referred to later.

The discovery of a runic inscription or other evidence of a like kind in America would not therefore be an extremely unlikely occurrence. It must be admitted, however, that all attempts to substantiate anything of the kind, with the possible exception of the Kensington stone, have hitherto failed disastrously. The ball was set rolling in 1837 by the publication of C. C. Rafn's *Antiquitates Americanae*, which first brought to the American public a widespread knowledge of the

Norse discovery. Misled, most probably, by the unscientific enthusiasm of American correspondents, this distinguished Danish antiquary committed himself to a belief in the runic origin of the well-known Dighton Rock inscriptions, now recognized as Indian pictographs, and to the identification as a Norse building of a ruin since proved incontestably to be the remains of a seventeenth century windmill. For some time afterwards similar wild attributions seem to have been quite common in the United States, though comparatively few of these established a sufficiently long-lived repute to be capable of being readily traced at the present day. It will be remembered, however, that Lowell, as late as 1862, satirizes the craze in the *Biglow Papers*, and it must therefore have been far more prevalent than is ordinarily realized. The most prominent examples are—the Fall River skeleton, demonstrably Indian, which inspired Longfellow's well-known verses ; the Grave Creek mound inscription, which may or may not have been a forgery executed by the exhibitor of the mound, but which, as it is certainly not runic, has no direct bearing upon our enquiry ; the Monhegan ' inscription ', discovered in 1856 and reproduced in Sir Daniel Wilson's *Prehistoric Man* (vol. 2, p. 178), which is clearly a specimen of natural glacial scratches upon a rock ; the markings, possibly of human origin, discovered upon a boulder near Yarmouth, Nova Scotia, an illustration of which may be seen in at least three publications,[2] showing again not the remotest resemblance to a runic inscription ; and, finally, Professor E. N. Horsford's claim to have discovered Norse remains—not, however, inscriptions—on the Charles River, near Boston. This claim is too absurd for serious consideration, and the same may be said of the other examples. With the possible exception, however, of the tiny oval tablet known as the Grave Creek mound inscription, which, if a fake, does not seem to be an imitation of anything Scandinavian, all these ' finds ' have this in common, that they are *bona fide* if misguided attempts to read Norse work into something with a perfectly genuine existence ; there is not the slightest suggestion of conscious fraud or forgery.

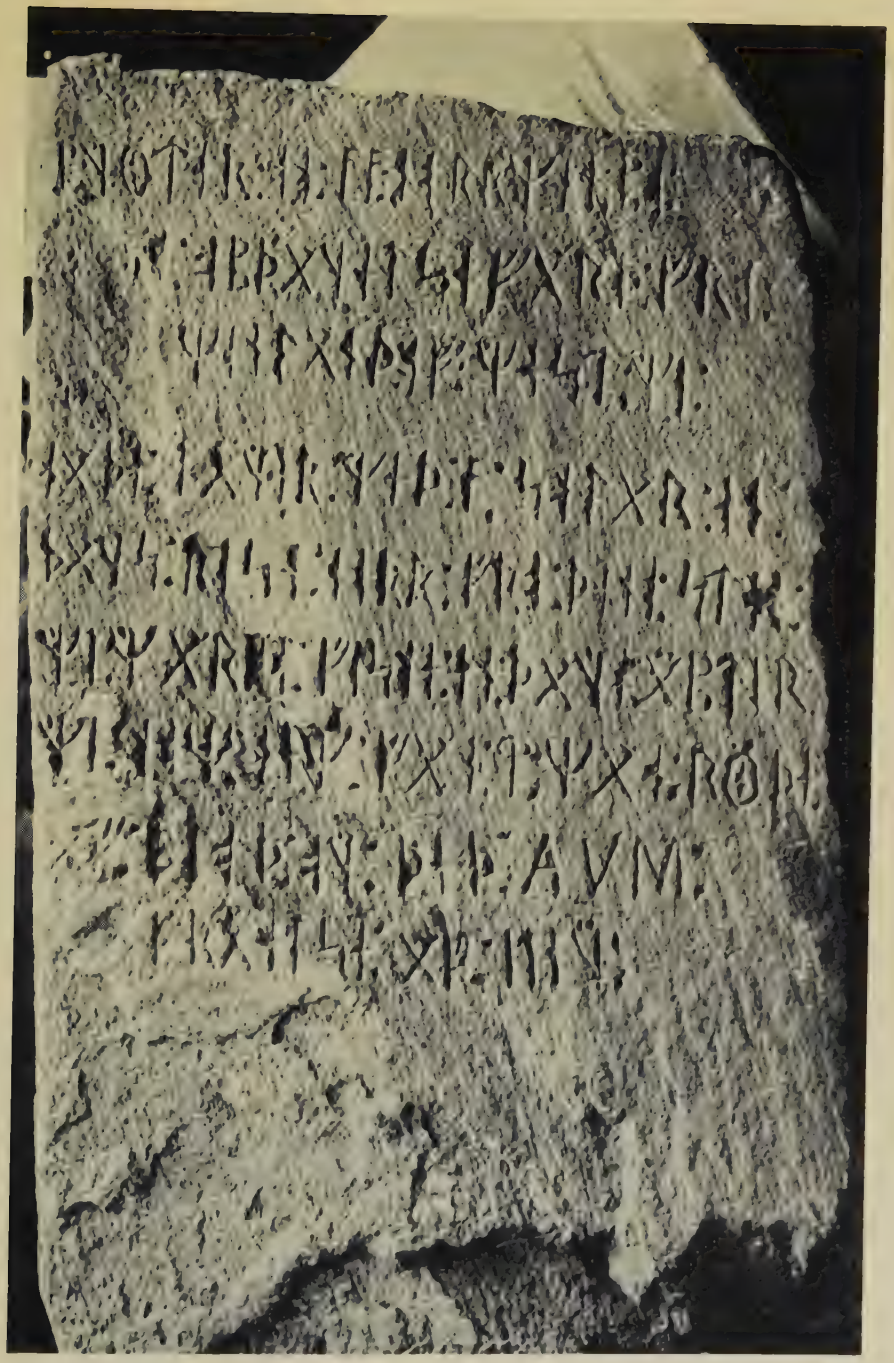
In a somewhat different category stands the runic inscription which came to light on the island of No Man's Land, near Martha's Vineyard, in 1926, some three years after Mr E. F. Gray, the author of a recent work on Leif Eriksson, had informed the owner of the

[2] *Procs. American Philos. Soc.* 1884, p. 491 ; Wilson, *The Lost Atlantis*, p. 54; Hovgaard, *Voyages of the Norsemen.*

island that his investigations were trending in that direction. This is unquestionably a runic inscription of a kind, and equally certainly a fabrication. The most probable explanation of it seems to be that it was the work of a practical joker who wished to amuse himself at Mr Gray's expense. It does not appear to have been a serious forgery intended to deceive the world at large, and as a matter of fact it was so crude that Mr Gray was not tempted to place reliance on it, however opportunely it seemed to confirm his notion of the whereabouts of Wineland. He does indeed suggest that it may be a memorial to the Norse explorer set up by some seventeenth century navigator with inside knowledge, but this theory is too far-fetched to meet with general acceptance.

A possibly Norse origin has also been attributed, on several occasions, to certain stone ruins, on islands off the Labrador coast, which are assigned by the Eskimo to an extinct people of foreign stock, whom they call ' Tunnit '. I myself investigated a number of these remains in 1920. My own conclusions having been occasionally misunderstood or misrepresented, I should like to make them clear. In spite of certain peculiarities, such as the rectangular plan of some of the buildings, the ruins appeared to be the work of a very primitive people, of Eskimo culture, using stone implements, and I believe them to have been so. But this does not quite close the question, for, while the remains which I saw are of this character, I am still impressed by some remarkable features in the Eskimo traditions concerning the Tunnit, who are everywhere represented, right up to Baffin Land and consequently by a number of different tribes, as a people distinct from Eskimo, of large stature but few in numbers, who lacked such characteristic and necessary aptitudes as that of dressing seal-skins, and, though living by the sea and even on islands, had no boats save such as they could steal from the natives. These and other points incline me to suspect that the traditional Tunnit were quite possibly shipwrecked Norsemen from Greenland, and that some remains on the coast may yet turn out to be of such origin, but that the Eskimo of the present day erroneously attribute to them any unexplained traces of stone building, much as an English or Irish peasant will attribute to ' Caesar ' or ' the Danes ' any old remains, of whatever period. In the present state of the evidence, however, no connexion between the Norsemen and the Tunnit can be said to have been established.

Having cleared these preliminary matters out of the way, we may turn our attention to the Kensington stone, which anyhow raises



THE KENSINGTON STONE (FACE)

*facing p.* 424

problems of a much more serious character than have confronted us hitherto. The inscription in this case is either genuine or a deliberate forgery, and there seemed at first sight to be little difficulty in the way of adopting the latter hypothesis. The stone was discovered near Kensington, Minnesota, in 1898, and naturally the remoteness of the spot from any place associated with the Wineland voyages, together with the fact that the district was then as now settled by an almost exclusively Scandinavian population, at once raised a violent presumption against its authenticity. There seemed to be so many possible forgers with the necessary knowledge, and suspicion at once rested particularly on two—the finder, a Swede named Ohman, and a down-at-heel Swedish ex-pastor, named Fogelblad, who had died in the previous year. Fogelblad undoubtedly possessed a Swedish grammar by Almquist, containing the later runic futhork of sixteen characters, and illustrative selections from the Swedish language from A.D. 1200 to modern times. A further point accidentally contributed to throw discredit on the inscription. The date included in it was not for some time interpreted. Professor Breda, therefore, to whom the find was first referred, expected the language to be Old Norse of the eleventh century or thereabouts, and drew the obvious conclusion when he found instead something far more closely resembling the Swedish or Norwegian of the present day. The inscription was consequently regarded by him and others as a clumsy attempt to archaize modern Scandinavian speech, and the stone was returned in disgrace to the finder, in whose yard it lay disregarded till Mr Holand came to inspect it some nine years later.

'Give a dog a bad name and hang him'. The disrepute which attached itself to the inscription from the first, whether deserved or not, places its champion at a serious disadvantage. Yet it is clear that the whole aspect of the case is changed if two points can be disposed of. If the stone purports, as it does, to belong to an age when Old Norse was no longer the appropriate language, one of the original grounds for condemning it disappears, and if it can be shown that the complicity not only of Ohman or Fogelblad, but of the whole Scandinavian settlement since its inception, is excluded, the question at once assumes a totally different complexion. It is to the latter point, which is of crucial importance, that Mr Holand's first proofs are directed.

The defence takes the form of an alibi, and our final verdict will very largely depend upon how far we find this conclusive. There were absolutely no Scandinavians in the district before 1864, prior to

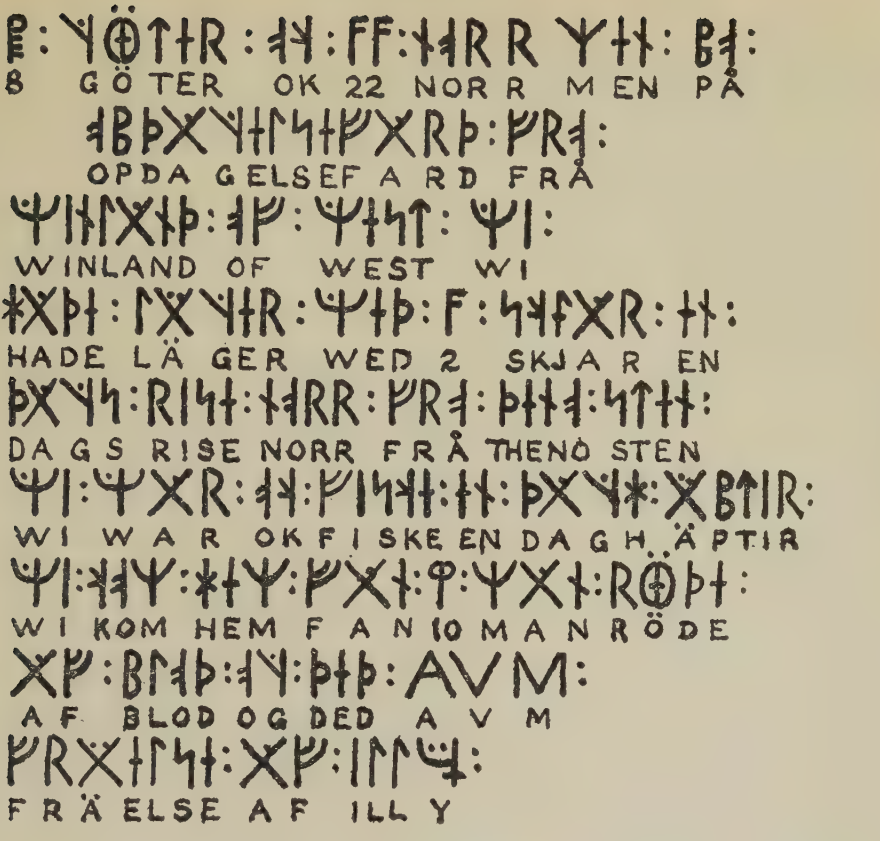
which date, indeed, the hostile activities of the Sioux rendered it unsafe for white occupation. Little suspicion can attach to the first settler, a humble trapper, so it is not really necessary for the alibi to carry us so far back. The suspect Fogelblad first appears in the district in 1885; Ohman, the finder of the stone, in 1891. Now Mr Holand produces the sworn testimony of at least three independent witnesses, besides Ohman and his son, to the effect that the stone was found, in 1898, buried in the ground under the roots of an aspen, which grasped it in such a way as to show that the stone had lain there during the whole period of growth of the tree. The size of the tree, as described by these witnesses, varies from eight to ten inches in diameter at the base of the trunk. One witness, Nils Flaten,[3] a neighbour, further deposes that he had visited the spot where the discovery was made earlier on the same day, and on many previous occasions, and had noticed nothing suspicious, and that, apart from the aspen, the ground was covered with a heavy growth of underbrush.

Now it is fair to point out that the evidence on the question was not sworn until many years after the original production of the stone, and also that, the tree itself having disappeared, Mr Holand's estimate of its age is based on an examination of similar specimens, corresponding as closely as possible to the descriptions given. It is more than likely that the witnesses may be mistaken in their recollection of the size of the aspen, and a considerable deduction may therefore rightly be made. The age of an aspen of the size described is, however, shown to be not less than seventy years, so that, when every legitimate allowance is made, it is still difficult to see how any of the modern Scandinavian population could have been responsible. Cut down by half from Mr Holand's figures, the alibi is still conclusive, unless we assume a deliberate conspiracy on the part of a number of apparently disinterested persons to commit perjury in support of a fraud with which it cannot be imagined that most of them had anything to do. Of course, if the evidence contains even a germ of truth, the case against Fogelblad and Ohman is smashed to atoms.

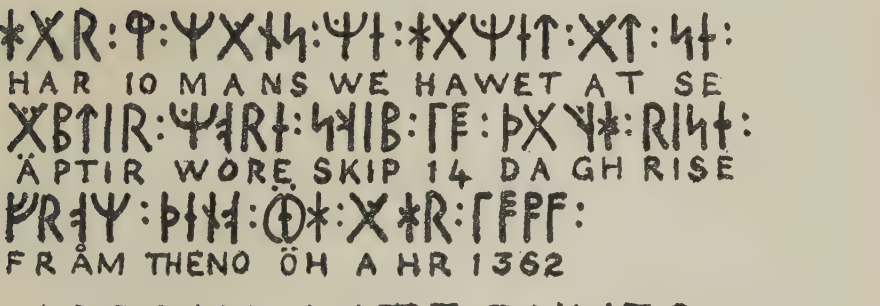
If we are driven to the conclusion that the inscribed stone was *in situ* before 1864, a conclusion borne out by the uncontradicted evidence of several geologists as to the weathering of the inscription, the hypothesis of forgery at once begins to appear improbable. A runologist in Minnesota at an earlier date would be a strange phenomenon,

[3] Flaten, a Norwegian, had lived within 500 feet of the place of discovery since 1884.

## FACE


8 GÖTER OK 22 NORR MEN PÅ
OPDAGELSEFARD FRÅ
WINLAND OF WEST WI
HADE LÄGER WED 2 SKJAR EN
DAGS RISE NORR FRÅ THENO STEN
WI WAR OK FISKE EN DAGH ÄPTIR
WI KOM HEM FAN 10 MAN RÖDE
AF BLOD OG DED AVM
FRÄELSE AF ILLY

## EDGE




## NORMAL LATE RUNES.

THE KENSINGTON INSCRIPTION, WITH TRANSLITERATION AND STANDARD RUNES FOR COMPARISON

so strange, indeed, that he should be easy to identify. Having reached this point, it is time to consider the inscription itself.

In its original form, it is represented in the accompanying illustration, which also gives the transliteration from the runes. Translated, it runs as follows :—

> 8 Goths (Swedes) and 22 Norwegians on a journey of discovery from Wineland through the west. We had camp by two skerries (or possibly reef-like ledges on land—an alternative which Mr Holand perhaps unduly neglects) one day's journey north of this stone. We were (out) and fished one day. After we came home (we) found 10 men red with blood and dead. A.V.M. (Ave Maria or Ave Virgo Maria) Deliver (us) from evil (phrased according to the medieval and not the modern Swedish version of the Lord's Prayer).

Here the inscription on the face of the stone ends, though there is ample space for more. Down one edge, however, to exactly the same depth, it continues as follows, the surface of this part of the stone having been prepared for its reception by ' a rough bush-hammering '.

> (We) have 10 of our men by the sea to look after our ships 14 days' journey from this island. Year 1362.

The situation of the inscribed portions suggests that the original intention was to set the stone upright in the ground, an unnecessary refinement for the purposes of a forger. The method adopted would have added not a little to the labour involved, which must in any case have been considerable, taking, it is estimated, not less than two days. In fact, the hypothetical forger has taken a great deal of superfluous trouble. The normal runic inscription plays but few variations on the precedent ' so-and-so set up this stone to so-and-so ', and to have followed an easily accessible example would have been to play for safety and save time, while achieving the desired result of suggesting the early presence of Norsemen in the vicinity. But the supposed forger does not shrink from facing several more unnecessary difficulties. He goes out of his way to describe as an island a place which at the present day is nothing of the sort, and which does not even suggest that it was one in the past, except to the eye of a trained geologist. For the Icelanders and Greenlanders usually associated with Norse visits to America, he substitutes inherently improbable Swedes and Norwegians. He commits himself to the definite statement that he is fourteen days' journey from the sea, a statement manifestly absurd, if it is to be interpreted literally, even in the mind of the most ignorant settler in Minnesota. If we adopt for the sake of argument the popular theory that this forger is Fogelblad, he shows an even stranger perversity. He has, as we have heard, a grammar with a table of runes

and specimens of fourteenth century Swedish. He makes no use of either. The U (V) sign, the second letter in his futhork, is ignored altogether. For the consonantal sound he substitutes a W, and for the vowel a Y, the forms of each being apparently based rather on medieval MS than on any known runic character. The common runic K is also unknown to him, though, curiously enough, he knows (but reverses) the G, which is merely a dotted K. His sign for A is also unique, being closest in form to that found in a late Dalecarlian runic alphabet, which, however, in other respects is widely different. His Ö is also unprecedented, and his D is invariably represented by the sign which the table in the grammar assigns to TH. On the linguistic side, the divergences of his grammar and spelling from accepted literary usage form the strongest weapon in the arsenal of those who attack the genuineness of the record. Fogelblad's possession of his grammar becomes, in fact, a strong point for the defence—no one with that grammar could have used those runes or perpetrated those solecisms.

So far, the hypothetical forger appears a first-class idiot and ignoramus. But he is not consistent in this character. Viewed from another angle, he shows himself a man of unusual scholastic attainments. The numerals used in the inscription are so unusual that for some time they baffled all attempts at interpretation, and even when their meaning was guessed it was thought, for years, that the system used was an invention of the forger. Eventually, however, it was found that they corresponded to a genuine medieval system, of which the only published account is to be found in a rare Latin work, written in 1643 by the Danish antiquary, Ole Worm. Even so, the examples given in this work are not slavishly copied ; the same system is applied but with some significant divergences. Whence could a forger derive this recondite knowledge ? Again, the phrase ' deliver us from evil ' runs, in modern Swedish, ' fräls oss ifrån ondo ', or, in Norwegian, ' frels os fra det onde ', and we should expect a Minnesota settler to be satisfied with the familiar form of the quotation. But the inscription gives ' fräelse (os) af illy ', which is phonetically to all intents and purposes identical with the form actually in use in Sweden in the fourteenth century—' fraelsae os af illu '.

The question of the date inscribed on the stone is also of cardinal importance. In any country, nine persons out of ten, interested in the Norse discovery of America, would have their minds concentrated on the early eleventh century, when the voyages of Leif and Karlsefni took place. The fourteenth century would never occur to them. If, on

the other hand, the date, 1362, is to be regarded as a mere bow at a venture, drawn in complete ignorance, it is remarkable that it lands on the only date in the Middle Ages when the presence of a Scandinavian expedition in America—an expedition, moreover, composed of Swedes and Norwegians—can be shown to be probable.

As has been mentioned earlier, about 1342 there is reason to believe that a considerable number of apostates from the Greenland colony may have emigrated to America, and thrown in their lot with some tribe of Indians, with which they may have become previously acquainted through trading. News of this event may easily have reached Norway in 1348, when a number of Greenlanders are known to have sailed to that country. However this may be, it is certain that in 1354 King Magnus Eriksson, who ruled at that time over both Norway and Sweden, commissioned one Paul Knutson to sail to Greenland, with the special task of seeing to the religious welfare of the colony. The expedition thus inaugurated did not return until 1363 or 1364, and it has been suggested by such authorities as the late Dr Nansen and Professor Gustav Storm that its long absence may be explained by a visit to America, an extension of the original commission rendered likely by the circumstances already alluded to in connexion with the Greenland apostates. But while the year 1362 thus becomes an extremely probable date for the presence of a mixed Scandinavian force in America, the possibility has hitherto met with so little attention that no one would have been likely to hit on the idea without a great deal of close study of the subject, which would probably have resulted in the publication of his views. It is by no means the sort of thing which any smatterer with a casual knowledge of the fact of the Norse discovery would be likely to know ; indeed, before 1887, when Storm alluded in passing to the possibility, the suggestion would have been quite original, and indicative of an unusual degree of research. The date, therefore, is one of the points which tells most strongly in favour of the authenticity of the inscription.

But, after all, a forger usually seeks to derive some personal benefit from his deception, even if it is only, as is apparently the case of the No Man's Land inscription, the pleasure of a quiet laugh at his victims. If once we are convinced by the evidence that the Kensington inscription cannot have been composed later than, say, 1864, the opponents of its genuineness are restricted to a very unlikely hypothesis. That a man would sit down in the middle of a dangerous wilderness, and spend at least two days in engraving an inscription of a length altogether

superfluous for his purpose in a thicket where it was extremely unlikely ever to be discovered, and that he would then disappear, without a hint or a trace, surely violates common sense and all experience of human nature. Yet, granted the alibi established by the roots of the aspen tree, this is what is necessarily involved.

In these circumstances, the case against the stone must be said to rest almost entirely on its linguistic peculiarities. It has been hotly contended that many of the words, forms of spelling and grammatical usages, are conclusively inconsistent with a fourteenth century origin. It may at once be conceded that an extremely ignorant modern Scandinavian might have written something more or less on the same lines. For this reason, as has been indicated, the argument becomes double-edged when we are forced to ascribe to the author--if modern—a considerable degree of scholarship. And, if once we exclude the modern Scandinavian settler, the inscription does not in the least resemble what a smatterer of another race would have been likely to evolve. He would have been more likely to indulge in bad Icelandic. Admittedly, nevertheless, the inscription conflicts, in several respects, with the established *literary* practice of Sweden in the fourteenth century. Mr Holand, however, going carefully into the question word by word, is able to show precedent for practically everything. The principal grammatical peculiarity, the use of an uninflected singular form of the verb with a plural subject, is abundantly justified. So is the use of the ' th ' rune for an unaspirated ' d '. For nearly every word, a fourteenth century parallel is actually produced, including ' ded ' for ' död ', which has been asserted to be English. Mr Holand, in fact, shows that many of his critics have been much too sweeping and hasty in their assumptions. ' Opdagelse ' and ' har ' still remain only partially justified, but there is force in the plea that the colloquial use of words usually antedates their appearance in formal literature. After Mr Holand's careful survey, it is difficult any longer to contend that the inscription is a linguistic impossibility. Yet, if this aspect of the question stood alone, I should personally be left with a slight bias against the authenticity of the record.

The most sensational evidence for the defence has, however, yet to be mentioned. Sensational, and therefore highly suspect, it will be said. I agree that it must be most carefully examined, and full weight given to every alternative, before it is accepted as conclusive. Let us proceed in this spirit. As a result of Mr Holand's known interest in the question, maintained over so many years, he has been the

recipient of all sorts of things deemed by the finders or owners to have a possible bearing on the enquiry. Most of these, as one would expect, have turned out to be of Indian–French or English origin. But the residuum is decidedly impressive. First in importance come the heads of three battle-axes, recognized by authorities in Norway, Sweden and Denmark as typical Scandinavian weapons of the Middle Ages, and differing widely in form from the types in use in other countries or periods. There are also a medieval Norwegian hatchet-head to which the same considerations apply, and a spear-head and fire-steel which, though also of the appropriate form, are perhaps less strikingly distinctive. Putting aside for the moment the hypothesis that these are relics of the expedition commemorated on the Kensington stone, there seem at first sight to be two possible explanations. The first is that they were brought over, as family curios, by some of the settlers ; the second, from which some critics do not shrink, that they have been deliberately imported and planted, to support the authenticity of the stone.

Let us consider both alternatives. Such things, in their country of origin, are exceedingly rare, even in museums. They are not the sort of thing of which the farmer immigrant would commonly be possessed, and, since they are things of no practical value, he would not burden himself with them, unless he regarded them with special pride. In the latter case, his treasures would certainly be brought to the attention of his neighbours. Again, they all show points of similarity indicating a contemporaneous origin in the same period, though they are not sufficiently alike in detail to appear the product of the same armourer. They can hardly all have belonged to one settler, since they come from widely separated districts. On the other hand, it is surely difficult to believe that several settlers should have happened independently to possess and to import rare curiosities so substantially similar. Moreover, the *provenance* is attested in each case, and, except on a theory of widespread and independent perjury, former ownership by a member of the present Scandinavian colony is shown to be impossible. Thus, Martha Davidson, widow, swears that one of the axe-heads was discovered by her late husband in 1894—before the appearance of the Kensington stone—a foot and a half below ground, under the root of a stump more than two feet in diameter. Another is traced to the possession of a pioneer settler, of Irish extraction, to whom it had been presented by Indians in the earliest days of the colonization of Minnesota. The spear-head was found in Wisconsin,

in 1899, being ploughed out of a piece of hitherto unbroken ground. The fire-steel was brought up by a post-hole auger, from a depth of two feet, by the first settler in Polk county, Minnesota.

The suggestion of a deliberate planting is largely covered by the same objections. But it presents further difficulties of its own. It would not be a simple task to procure one medieval Swedish battle-axe ; to make so large a collection without being traced would appear nearly impossible. Moreover, the planter would presumably sow his evidence in the neighbourhood of the stone : he would not travel over most of Minnesota and Wisconsin, dropping now one, now another, of his *pièces justificatives*. If the suggestion is that he left them to be found as described, what a risk he ran that his labour would be wasted. If on the other hand he is supposed to have suborned the swearer of each affidavit, how lucky he must have been to have found so many persons in different places willing to lend themselves to his wicked, but rather motiveless, schemes, and never to have approached one who remained incorruptible and denounced the fraud ! I should in fact have ignored this explanation, had it not been quite explicitly put forward by a distinguished American historian, with whom I have corresponded on the subject.

The case is now stated in its main features. I will not venture on any dogmatic conclusion, my object having been to sum up judicially for the verdict of the reader. It appears to me, however, that this at least must be admitted, that Mr Holand has made out a case for a complete new hearing, and that objection to the stone can no longer be based on the fact that the weight of authoritative opinion has hitherto been adverse. Whether considered as an archaeological fraud or a unique contribution to historical knowledge, the Kensington Stone would seem to be a subject in which antiquaries may well take interest.

# The Israelites in Sinai

by C. S. Jarvis, Governor of Sinai

IN my recently published book[1] I have advanced a theory as to the Wanderings of the Israelites and the loss of the Egyptian Host, which if not entirely original contains a considerable amount of fresh evidence based on ten years' experience of the Peninsula. Like all theories that tend to upset old beliefs this has resulted in a considerable amount of criticism and comment. The assumption briefly is that the Israelites never went to southern Sinai as has been firmly believed for the last 1900 years, but remained for the whole of the period of the Wanderings in the comparatively small cultivable area in the north-east corner of Sinai where they could grow corn for making bread and find grazing for their flocks. This part of my theory is by no means new as the same views have been expounded already by several students of the Wanderings, and I have merely corroborated their opinion and brought forward new evidence and arguments to prove the theory by virtue of my long residence in the Peninsula and knowledge of the country and climate. The explanation I have given of the loss of the Egyptian Host, however, is a novel one, and so far as I know has never been published previously though Sir William Willcocks[2] assumes that the disaster occurred in a lake in northern Sinai and not in the Red Sea; but the lake he selects is not the Bardawil as I maintain, and the incidents that caused the flooding were totally different from those I have suggested.

As the explanation of the mystery of the Wanderings has been dealt with very fully in *Blackwood's Magazine* for February 1931, and also in my book, it is intended to recount briefly the outline of the arguments that are advanced, and having done that to deal with the criticisms that have appeared in reviews and correspondence in the press. The greater part of these criticisms are extremely interesting as they emanate from students of the Bible who know their subject far better than I do, but who on the other hand have not had the advantage

[1] *Yesterday and To-Day in Sinai*, Blackwood, 1931.

[2] *From the Garden of Eden to the Crossing of the Jordan*, Spon, 1929.

of knowing thoroughly the whole Peninsula or of studying its climatic and other conditions.

In the first place the only account of the Wanderings that exists is contained in the Bible, and the two books that deal with them are Exodus and Numbers. Unlike most epoch-making events in history there is no contemporary literature to enable us to read the other side of the story, and this rather tends to prove that the departure of the Israelites from Egypt and their subsequent wanderings in the desert were not of great historical importance to Egypt. Egyptian history is fairly complete considering the lapse of time, and there is no record of the Israelites fleeing from the country nor of the loss of a king and his army by drowning. All that we have to guide us therefore in forming an opinion as to what happened are these two books of the Bible, and tradition. Tradition is absolutely unreliable as no attempt was made to locate the various sites of the Wanderings till at least 1500 years after the event. One may presume that various devout pilgrims in the first century A.D. journeyed into Sinai in search of a great mountain, and having found several peaks in the south of the peninsula with the characteristics they were looking for made the rest of the Bible story fit in with their selection, and gave the old Biblical names of the halting-places to various wells and palm groves on the route. This route having been definitely selected, every Bible historian, who in recent days has made the journey to Sinai with possibly only a month or so at his disposal has been taken along this road and has been handicapped therefore in forming an unbiassed opinion. It should be borne in mind also that the present Mount Moses is not by any means the original selection, as at different times between the first and fourth centuries other peaks such as Gebel Serbal, Gebel Caterina, and Gebel Um Shomer have been accepted as the Mountain of the Law. I maintain therefore that the solution can be found in the books of Exodus and Numbers and nowhere else, and that the old tradition is absolutely valueless as evidence.

The reasons for thinking that the Israelites never went to southern Sinai are, briefly, as follows :—

(1) The Israelites were accompanied by a vast number of animals and grazing had to be found for these flocks. There is no grazing worth mentioning in southern Sinai as it is practically all solid or disintegrated granite. Moreover at all feasts and ceremonies during the Wanderings the Israelites ate bread, oil, meat and other foods, which proves that they must have been cultivating the soil. Nothing

will grow in southern Sinai except a few olive and almond trees in certain of the valleys, but in northeast Sinai there is a large tract of country capable of producing excellent corn crops and providing grazing for large herds of animals.

(2) The Israelites shortly before the Giving of the Law, and also immediately afterwards, fed on quail that alighted round their camp in swarms. This phenomenon happens annually today in northern Sinai, but never in the south. The migrating quail land on the Mediterranean coast and nowhere else in Sinai. Three days after their departure from the Mount the Israelites fed on quail at Kibroth-Hataavah. Their rate of marching with flocks cannot have been more than ten miles a day, and this would definitely put the site of the Holy Mount about thirty miles south of the northern shore of Sinai.

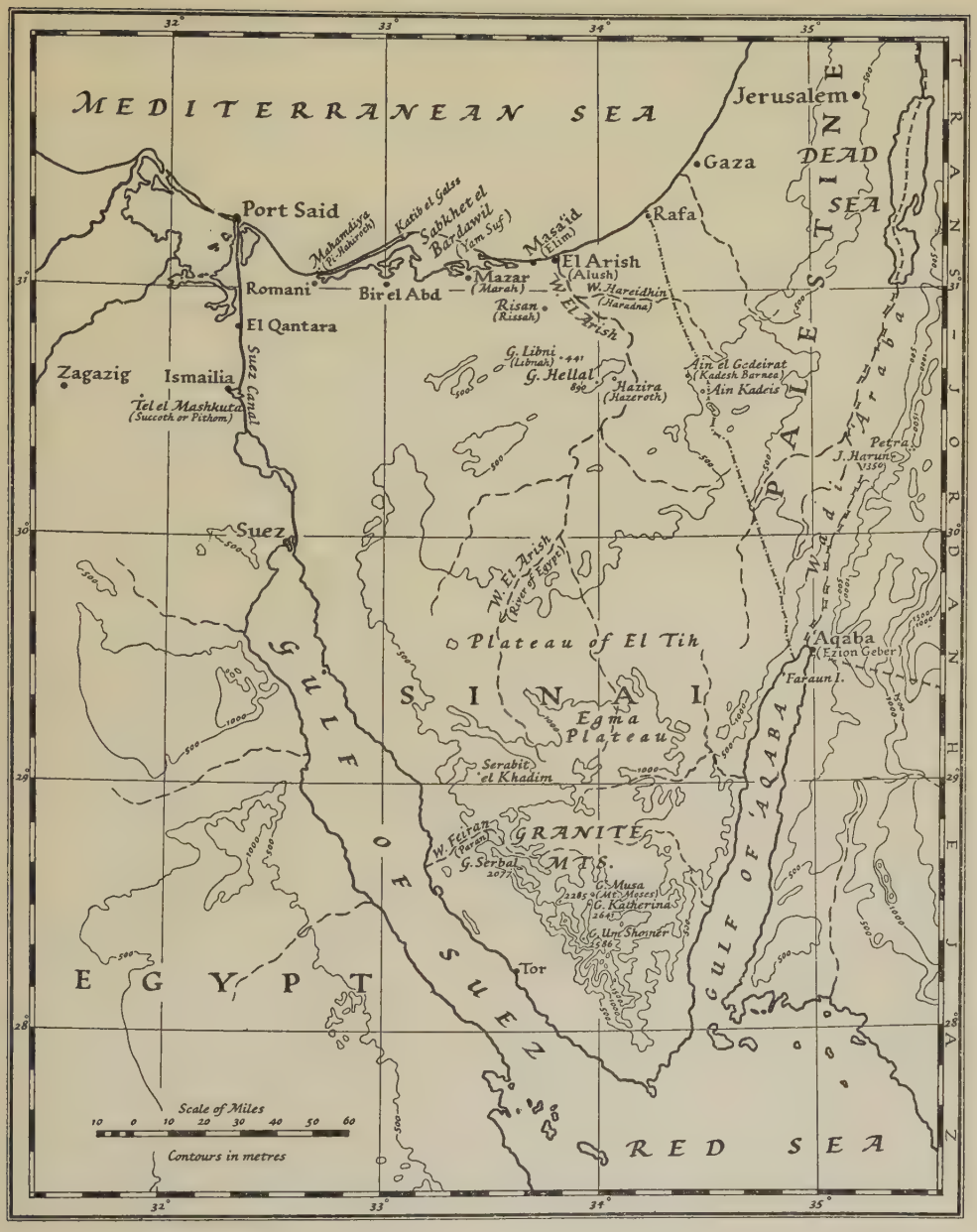
(3) It is reasonable to suppose that the Israelites would avoid Egyptian authorities as much as possible, yet at the time of the Exodus the Egyptians maintained a garrison at Serabit el Khadim for the protection of their turquoise and copper mines, and Serabit el Khadim is only fifty miles from Mount Moses and fifteen miles from the route of the Wanderings. On the other hand in northern Sinai they appear to have maintained only frontier posts along the edge of the cultivation, which in those days was considerably further to the east than it is today.

(4) The manna is said to be the deposit left by a small insect that feeds on the tamarisk tree. There would need to be a very large number of tamarisks to provide sufficient manna for the Host and in southern Sinai these trees only grow in isolated patches in the Wadis. There is evidence that there was a forest belt of these trees along the Mediterranean coast before the introduction of the camel practically denuded Sinai of all vegetation.

(5) In southern Sinai there is only one place with a name today that in any way resembles any of the halting-places mentioned in Numbers, and this is Feiran, which is supposed to be the Paran where the Amalekites were defeated. In the north there are several places with names that mean nothing in Arabic (in the desert every name has its meaning), and which are very similar to some of the names of the Wanderings. All these, such as Haradna, Rissah, Hazeroth, Libnah, etc., are in the cultivable area in the northeast of Sinai.

The only direct evidence against the theory is in Exodus, XIII, 17 and 18, as follows :—

' And it came to pass, when Pharaoh had let the people go, that


MEDITERRANEAN SEA
Jerusalem
Gaza
DEAD SEA
PALESTINE
Rafa
Port Said
Mahamdiya (Ex-Mahsuriah)
Katib el Galas
Sabkhet el Bardawil (Yam Suf)
Masaid (Elim)
El Arish (Alush)
W. Hareidhin (Haradna)
Mazar (Marah)
Romani
Bir el Abd
Risan (Rissah)
El Qantara
Suez Canal
Zagazig
Ismailia
Tel el Mashkuta (Succoth or Pithom)
G. Libni (Libnah)
G. Hellal
Hazira (Hazeroth)
Ain el Gedeirat (Kadesh Barnea)
Ain Kadis
Petra
J. Harun
Suez
W. El Arish (River of Egypt)
Plateau of El Tih
SINAI
Egma Plateau
Aqaba (Ezion Geber)
Faraun I.
GULF OF SUEZ
GULF OF AQABA
Serabit el Khadim
W. Feiran (Paran)
GRANITE MTS.
G. Serbal
G. Musa (Mt. Moses)
G. Katherina
G. Um Shomer
EGYPT
Tor
RED SEA
Scale of Miles
10 0 10 20 30 40 50 60
Contours in metres

God led them not through the way of the land of the Philistines, although that was near ; for God said, Lest peradventure the people repent when they see war, and they return to Egypt :

' But God led the people about, through the way of the wilderness of the Red Sea : and the children of Israel went up harnessed out of the land of Egypt '.

This certainly seems to point to the fact that they went south, but Red Sea is translated from the Hebrew ' Yam Suf ', and ' Yam Suf ' means Sea of Reeds and not Sea of Red. A sea of reeds rather suggests an inlet or lagoon with rushes and reeds growing thickly near the shores ; and Lake Bardawil on the northern coast of Sinai suggests itself not only as the Sea of Reeds mentioned but as being responsible for the loss of the Egyptian Host.

It has been pointed out[3] that ' the words Sea of Reeds do not prove that the sea referred to is a sea of reeds any more than the English words applied to the same sea prove that it is a sea of red water '. I submit that if a sea is called a Sea of Reeds that it must contain something to suggest reeds, rushes or, at any rate, sea-weed, and the southern shores of Lake Bardawil are covered with rushes. There are no rushes or reeds in the Red Sea, and in that particular arm of it—the Gulf of Suez, where the crossing is supposed to have taken place—it is singularly free from sea-weed of any kind. One never sees sea-weed floating on the surface of the water, neither is there a bank of it washed up on the shores after a gale. As to the contention that the name Red Sea does not prove it is a sea of red water I imagined that everyone was aware of the reason for the name, which is singularly apt. On either side of this sea there are high red mountains ; and on a calm evening when the sun is setting the whole of the Gulf is a dull crimson from the reflection.

The words ' led them not through the way of the land of the Philistines, although that was near . . . But God led the people about through the way of the Red Sea ' does rather suggest a circuitous route to the south, or any direction but due east along the coast. There is, however, a more or less reasonable explanation. In the days of the Roman occupation of Egypt the recognized route to Palestine ran along the existing railway track by Romani, Bir el Abd, and Mazar. In Roman days it was a highway with halts every fifteen miles and was probably paved. It is reasonable to presume that it has always been the

[3] Lt.-Col. G. F. Poynder in *Morning Post*, 5 October 1931.

road to Palestine and was just as extensively used in 1500 B.C. as it was some 1600 years later. This road runs a matter of some fifteen miles south of the seashore and on the southern side of Lake Bardawil, and it is contended that Moses, to avoid any trouble with the posts at the watering stations, led his people along the actual shore, which was not 'the way of the Philistines', but was by 'the way of the wilderness of the Red Sea.' It is admitted that there is no great difference in the routes so far as distance is concerned, but it is submitted that if the southern route was a paved road with possibly Egyptian outposts on duty at the watering stations the other more roundabout track along the sea coast might be referred to as 'the way of the wilderness of the Red Sea'.

In the review of my book in ANTIQUITY[4] the suggestion that the 'Pillar of Cloud and Fire' might have been the column of cumulus that forms on the Sinai coast during heavy weather, is criticized as being a not altogether suitable explanation of the cloud that led the Israelites on their march: the objection being that it would come in from the eastward and pass away over the Mediterranean to the west. This is what one would expect it to do, but actually this cloud-formation sometimes occurs two or three days before the weather breaks and remains stationary out at sea, increasing in size and depth of colour. When the gale springs up it moves southward over the land and breaks in violent but rather local squalls of rain and thunderstorms.

In looking for a suitable site for the Lawgiving, Gebel Hellal, some thirty miles south of El Arish, at once suggests itself. It is certainly not so impressive as Mount Moses, but it rises up sheer from an alluvial plain and being 890 metres high is very imposing when one takes the surrounding country into consideration. Its name 'Hellal' is particularly apt as Hellal in Arabic means 'lawful', and the Arabs of Sinai, who have an explanation for most place-names, cannot account for this particular mountain being called 'lawful'. Some critics have suggested that the name is really 'Hilal', which means 'crescent', but this is wrong—the name of the mountain is definitely 'Hellal'. It was also explained that it does not suggest a great and smoking mountain which can only have been caused by volcanic action. This is an interesting point to raise as I find that a large number of people believe that the various fiery manifestations that occurred during the Wanderings were caused by the volcanic nature of southern Sinai.

[4] March, 1932, p. 116.

This is an apparently feasible explanation of the ' burning bush ', ' pillar of fire ', and ' Mt. Sinai altogether of a smoke ', and the assumption appears reasonable when one realizes that southern Sinai is tossed and tumbled at every angle by volcanic action. Unfortunately for this belief the Survey Department of Egypt, who have most carefully explored the Peninsula from a geological as well as a geographical point of view, give it as their considered opinion that Sinai has not been actively volcanic for at least a million years, and certainly not during the human period. This effectually dispels the theory of attributing the fiery manifestations to volcanic action, but even if the views of the Survey Department are not accepted one must bear in mind that Gebel Hellal is also volcanic and was thrown up at the same time as the rest of Sinai.

I am of opinion that the mention of smoke, fire and quaking was inspired by the violent thunderstorms to which Sinai is subject. The Israelites coming from the Nile Valley, where thunderstorms are very rare and where the land is absolutely flat and featureless, were no doubt overawed and terrified when they saw a storm raging round the peaks of Gebel Hellal. When there is bad weather in Sinai the top of this mountain is always wreathed in smoke-like clouds, which are rent from time to time by forked lightning, and the terrific crashes of thunder actually cause the earth to quake. A storm of this description bursting over a rocky and lofty peak must have been a weird and terrifying sight to a people who had never seen previously either a thunderstorm or a hill more than twenty feet high.

Beyond the fact that Gebel Hellal possesses a name that lends itself to the theory that it is the Mountain of the Law, and is moreover the highest peak in the area where the Israelites probably sojourned for the greater part of the Wanderings, there is no further evidence to prove that it is actually the Mount, and it is just as possible that the Law-giving occurred on any of the six or seven imposing massifs in that locality. There are many historians who hold the view that the actual event took place in the Petra area and that Mount Haroun is the site. The argument against this theory is that only three days after their departure from the Holy Mount the flight of quails descended upon the camp at Kibroth-Hataavah, and this must have occurred on the Mediterranean coast, for the very simple reason that nowhere else are the quails seen in Sinai.

I have had my attention called to a book on Egypt[5] said to have

[5] *The Chronicles of Osiris.*

AIR-PHOTOGRAPH SHOWING THE NARROW SAND TRACK BETWEEN THE MEDITERRANEAN SEA AND LAKE BARDAWIL

One of the cuts made by the sea is shown in the distance; the dark patch to the left of it is the sea-water flowing in

*Crown copyright reserved*

*facing p.* 440

been written by clair-audient dictation by an ex-officer of the Royal Air Force, who has never been to Egypt and moreover knows nothing of Egyptian history. The book is remarkable as it shows an intimate knowledge of the ancient history of that country which is very difficult to account for when one considers that it comes from the pen of a man who was absolutely uninformed on the subject. Incidentally the book upsets a large number of theories about Egypt's past that have been accepted by Egyptologists. The flight of the Israelites is referred to as follows :—

' Osi-ra-es (Moses) had organized the tribes after this manner : the Ark of Amen in charge of Asar-haron proceeded to lead the tribes and behind it came all the elders and chief priests of the temple, which was at that time only a portable building. Next came the women and children and all the civil population, and bringing up the rear the men of war who guarded the exodus of the people. The frontier guards having heard what was taking place shut themselves up in their strongholds or joined with the migrating tribes. Then was it that a terrible storm, in the midst of which the heaviest fighting took place, broke over the whole province of the Delta. The Egyptians were very persistent and followed close upon the heels of the retiring tribes, till at length the marshlands at that time existing round the Sinai Peninsula were reached. The tribesmen under the command of Osi-ra-es retreated behind these marshlands drawing the Egyptians after them. When at length both armies were between the peninsula and the marshes, the forces of Osi-ra-es turned and offered fight to the Egyptians, who were so completely taken by surprise that they fled in panic, many of them being submerged in the marshes in their hasty flight ; and among those who perished in this manner was the king's eldest son and heir, Thothmosis. Thus you will see how the tribes referred to in the Bible as the Children of Israel crossed over into the desert of Sinai on their way to Palestine '.

This is very much the same as the theory that I advance except that my view is that the sea broke through into the marshlands and completed the destruction of the host.

A very convincing touch is the sentence that deals with the frontier guards shutting themselves up in their forts or joining in with the migrating tribes. In the many articles written about the Wanderings it has never occurred to anyone to wonder what action was taken by these men on out-post duty on the frontier, and yet we know there must have been frontier guards for their forts, as sand and clay mounds,

exist along the flat lands to the east of Kantara and Ismailieh. Egypt in those days was constantly in a state of war with her eastern neighbours, and it is obvious she must have maintained a strong force on the edge of the cultivation to hold back the first shock of an invading army, and in normal times to guard the settled part of the Nile Valley from Beduin raids. The word Beduin may have a modern sound, but there is no reason to suppose that a harsh wilderness like Sinai was ever inhabited by any other race. It matters little whether they are called Anus, Mentus, Ishmaelites, or Saracens—the conditions are such that none but a race similar in every respect to the Beduin could exist in Sinai, and the Beduin of today and the Anu of 5000 years ago are in all probability practically the same. With the exception of his rifle, which he has acquired from Europeans, there is nothing about the present-day Beduin, his mode of life, his dwelling and his implements that has changed in the course of time.

When the frontier guards were faced by a resolute and desperate host of fighting men that completely outnumbered them they in all probability did exactly what the writer of *Chronicles of Osiris* states : they shut themselves up in their strongholds and took no action, nor joined in with the migrating tribes.

My theory of the loss of the Egyptian army is that the Israelites were moving eastwards along the actual coastline, and when one considers they were accompanied by their women and children and their flocks of sheep and goats it is obvious they were not travelling very fast, so that a well-equipped force setting out from the vicinity of say Zagazig would have no difficulty in overtaking them. Along the coast line some thirty miles from Port Said stretches the huge Bardawil lake that normally is a flat clay pan separated from the sea by a strip of sand from one to three hundred yards in breadth. In heavy weather the sea breaches this strip of sand and fills up the whole depression to a depth of from three to six feet. In a few days these cuts silt up again and the water dries out in course of time, so that Lake Bardawil is normally dry with a hard clay surface that will support a man on foot, but will most definitely not carry a horse or wheeled vehicle. The pan is thirteen miles at its widest, but in parts it is no more than three or four miles from its southern shore to the strip of sand that divides it from the Mediterranean.

The Egyptian army were travelling along the inland road that runs from Kantara through Bir El Abd to El Arish, and their scouts brought in information that the Israelites were on the coastal track.

Possibly they could see them, and the obvious thing to do if one did not know the country was to cut across the clay pan and head them off. This they did and by the time they had travelled a mile or so and had reached the softer parts of the pan they were in serious trouble—the horses wallowing to their girths and the wheels of the chariots breaking through the crust to the soft mud underneath to the hubs of the wheels. One has only to read carefully Exodus, XIV, 24–28 to see that the Egyptians were in the first place bogged, and that the swallowing up of the army by the sea did not occur till the following day. There is absolutely nothing in the actual text to support the old theory of our childhood days, to which so many people cling, that the sea opened up to allow the Israelites to pass and then rolled back in a huge wave over the Egyptians, and it is difficult to understand how the belief ever originated. The story as it is told suggests an army floundering in the mud and in serious difficulties long before there is any mention of the sea. ' Entangled in the land ' obviously means ' floundering in the mud ', and this is proved still more definitely by the words ' and took off their chariot wheels, that they drave them heavily '.

There was probably a very strong gale working up and in verse 20 a cloud is described as white and shining on the camp of the Israelites and dark on that of the Egyptians. This is a good description of the violent cloud-bursts that occur in Sinai every winter and spring. They are very local, and outside their area the sun shining on the falling rain makes it appear as a shimmering silver curtain, but inside the cloud-burst it is nearly as dark as night. The heavy rain added to the difficulties of the already bogged Egyptians, and then the violent squall brought up a high sea, the narrow spit was breached, and the sea came rolling in on to the pan—as it does at the present time whenever there is heavy weather. It does not need any vivid stretch of the imagination to visualize the disaster, as it is an occurrence that could happen today, and moreover it is not necessary to read the verses of Exodus in any other way than in their literal meaning. Moses' song of triumph in chapter XV was a poetic rendering of the epic story, and cannot be regarded as such reliable evidence as the bald facts related in the previous chapter.

The statement that the Israelites walked upon the dry land in the midst of the sea with the sea as a wall unto them on their right hand and on their left is precisely the feeling that one gets today if one walks along the narrow sand spit with the Mediterranean to the north and the Bardawil lake to the south, and no land in sight. One can easily

understand an ignorant and fanatical people would imagine that the pathway had been opened up for them by Divine power.

Although critics of my book have disputed most of the theories I advance for placing the Wanderings in the north of Sinai and not the south, so far no one has found any weak spot in the Bardawil theory except one sweeping and uncorroborated assertion that ' any unbiassed reader of Exodus cannot fail to see that the conditions of the site do not in any way coincide with the story as told '. The loss of the Egyptians is referred to in later books of the Bible, but these cannot be regarded as first-hand evidence nor used to refute in any essential details the story as told in Exodus, which is not an account of an army suddenly swallowed up by a tidal wave or by the rolling back of waters by Divine power. It is most definitely a story of an army bogged in soft mud for the best part of a day and a whole night, and engulfed the following morning by an influx of the sea.

References as to the Mahommedan belief that the loss of the Egyptian host took place in the Gulf of Akaba have been asked for,[6] but I regret that I cannot supply any. So far as I can make out it is merely an Arab tradition, and as my knowledge of Arabic literature is very limited I cannot say if there is any written record. In any case it would not be earlier than about A.D. 600. The Beduin have some vague idea of the doings of all the patriarchs and prophets, and are particularly interested in Moses because of his ability to strike rocks and find water, which in their eyes is the most useful gift a man can possess, and also in the story of Noah and his Ark. They say that Moses was in Sinai with the ' Yahudi ' (Jews) and that Pharaoh's host was lost in the Gulf of Akaba in the vicinity of Faroan Island—Faroan being the Arabic form of Pharaoh.

In a short article it is impossible to deal with every point and all the evidence in detail, but in these notes I have endeavoured to answer the arguments that students of the Wanderings have advanced against this new theory.

---

[6] ANTIQUITY, March 1932, p. 117.

# Maze Symbolism and the Trojan Game

by W. F. J. Knight

IN his detailed account of the chambered cairn of Bryn Celli Ddu,[1] Mr W. J. Hemp describes a remarkable pattern stone, found on the site lying flat in a floor of purple clay, as it had been deliberately placed by the builders of the monument.[2] Mr Hemp says that ' The recumbent position of the stone . . . and the disposition of the pattern

DIAGRAMMATIC DRAWING OF PATTERN STONE, BRYN CELLI DDU, SHOWING CONTINUITY OF DESIGN
*By permission of the Society of Antiquaries of London and Mr W. J. Hemp*

inevitably suggest that it was intended to be set upright in the ground at some stage in the funeral rites in such a way as to display the pattern'. He adds that the meaning of the pattern is unknown but that some form of magic is perhaps the most obvious explanation, and cites references for the occurrence of the style in megalithic monuments of Brittany[3]

[1] *Archaeologia*, 1930, LXXX, 179–214.
[2] Ibid. 197f. and pl. XLIX, figs. 1 and 3.
[3] M. et E. Péquart et Z. le Rouzic, *Corpus des Signes gravées des Monuments mégalithiques du Morbihan* (Paris, 1927). Cf. especially pls. 1, 3, 5, 14, 19, 23, 31, 33, 35, 50, 59, 71, 72, 73, 75 (a good example), 80ff. (where wheels are suggestively shown : cf. infr.), 96, 99ff.

and Ireland.[4] The pattern is incised on the stone, with a leaf-shaped outline. The lines are zigzag, and the design at once suggests an inaccurately rendered maze formation.

This motive, or rather the cognate motive of the spiral, occurs again in the monument. It is formed on one of the upright stones[5] as a small and simple design. But there is something else much stranger than that. Of the plan of the structure itself Mr Hemp[6] writes :

> ' Further study of the design brought to light a very surprising fact. To a spectator standing without the outer passage the monument appears to have a perfectly symmetrical arrangement of four converging walls, all terminated at the portal by upright stones . . . Analysis of the plan, however, reveals a very different position. . .
>
> ' This end of the inner circle therefore is continuous with the north wall of the passage. This wall runs on without a break, curving round to form the chamber, and returning as the south wall of the passage, to complete the circuit of the monument . . . the line of walling therefore runs without a break twice round the monument. . . In fact the two " circles " may be considered as together forming a gigantic spiral, in which is a loop comprising the passage and chamber.
>
> ' If then, the whole inner area of the monument enclosed by the ditch is a " holy place ", the burial chamber is in it but not of it, being completely shut out by the " loop " in the spiral '.

In other words, the spiral form occurs three times in the monument, once as the actual structural design. I first connect these three occurrences together, and propose to find a similar interpretation of all three. I assume that the best explanation is some kind of magic, and approach the attempt to say what kind. Next I ask what are the associations of this motive in other places and times ; for though megalithic man has not articulately communicated his secrets, the pattern in its variation is so extremely general that its meanings may be guessed to be on the whole coherent, if not quite the same, always.

The maze form—which is an elaborated spiral—gives a long and indirect path from the outside of an area to the inside, at a point called the nucleus, generally near the centre. Its principle seems to be the provision of a difficult but possible access to some important point. Two ideas are involved : the idea of defence and exclusion, and the idea of the penetration, on correct terms, of this defence.

---

[4] G. Coffey, *New Grange* (Dublin, 1912) ; E. A. Cornwell, *Procs. Royal Irish Academy*, XVI, 72 ; W. Frazer, *Procs. Soc. Ant. Scotland*, XXVII, 294.

[5] *Archaeologia*, 1930, LXXX, 184, pl. XLV, fig. 1.

[6] Ibid. 200f. ; cf. pls. XLVI, fig. 2 and LIV, fig. 1.

I argue that these conceptions, to our minds necessarily implied by the maze form, are inherent also in early presentations of it, and were partly, at least, intended by most of the artists who employed the principle in early times, though the intention need not have been explicitly remembered and understood. In fact at Bryn Celli Ddu there is inaccuracy of treatment, as though the artists were attempting to follow a tradition that they could not clearly understand ; a thing not uncommon in early monuments.

Maze rituals can sometimes be identified in the long history of the maze form. They have been connected with solar ceremonies. This explains some circular movements, perhaps, but not the principle of obstructed penetration. I suggest that the obstructed penetration is the concept nearest to the base of many of the rituals and forms, though I do not deny the possibility of solar relevance altogether. This concept can be applied in its positive or negative denotations in much of the material which offers any chance of interpretation. The Egyptian hieroglyphic which is an element from which the maeander pattern can be derived stands for ' house '. The Cretan symbolism of maze and Minotaur, which seems a pure form in which the correlatives of exclusion and entry both appear, is expressed on coins of Knossos in the maeander form, which has been thought also to represent a house or house wall on Attic vase paintings. In a bold attempt to interpret the Cretan scripts it has been suggested that the letter M is a derivative of the symbol of the template by which maeanders were made, and that accordingly the same letter was used as a determinative for ' sanctity '.[7]

That the myth of Theseus and the Minotaur expresses something which was also expressed by ritual is generally believed. Ariadne's crane dance[8] is admitted to represent one of these rituals. So is the Troia, Truia, or Trojan game, a ritual ride of armed horsemen practised in early Italy and much encouraged by the Roman emperors.

Now if the Troia is a maze ritual, it seems that a chance of arguing from it to the general meaning of the maze form, if it had one, has been missed. Classical scholars have investigated the Troia, and anthropologists and folklorists have considered the maze patterns found in material representations ; but the combination of results is unsatisfactory. The Troia is certainly old in Italy[9] and probably enough

[7] F. Melian Stawell, *A Clue to the Cretan Scripts* (London, 1931), 40–44.

[8] *Iliad*, XVIII, 590ff. ; Pollux, IV, 101 ; Tryphiodorus, 352ff. (where the scene at the entry of the wooden horse into Troy is compared with the crane dance. Cf. infr.).

[9] Suetonius, *Augustus*, XLIII, 2 ; Dio Cassius, XLIII, 23.

it was also at home in Troy. Mazes are very generally called by the name of ' Troy '.[10] ' Troys ' that existed in ancient Italy,[11] as they exist still in North Europe, were surely places where there were mazes : Pliny mentions the treading of outdoor mazes as a game.[12] Probably the presence of these ' Troys ' helped the spread of legends of Trojan foundations, though some of the legends seem to have been partly true in a more literal sense. At any rate, the Troia certainly followed a maze form for its convolutions. In a very usual fashion, Vergil[13] betrays the truth by saying that the movements of the Trojan game were *like* the intricacies of the labyrinth at Knossos; it is in this way that he divulged the secret of the Golden Bough by saying that it was ' like ' what in fact it actually was in the beginning—the mistletoe. Folklore misunderstood and forgotten frequently becomes poetic metaphor in the end ; a truth which psychologists can partly explain, and which other investigators can often use with advantage.

Vergil is confirmed by the famous Tragliatella Oenochoe, Etruscan work of the sixth century.[14] On that are shown armed horsemen riding; they trail behind them a large incongruous maze, which quite obviously expresses the path which they have taken ; and to the picture is added the word 'Truia'. In early Italy, therefore, armed horsemen used to perform ' musical rides ' (with or without music, probably with), in which they made maze movements, clearly enacting something symbolically.

The meaning of the Troia is the harder to understand because it seems to have been a secret in antiquity. There was a book about children's games by Suetonius, however, and Servius[15] says that in it he identified the Troia with ' Pyrrhic ' dances. The Troia was called a ἱερὰ ἱπποδρομία,[16] which means that the horses were important to its nature, and also that it was connected with some supernatural relevance. ἱερός, which is not the same as ἅγιος, or ὅσιος, does

---

[10] W. H. Matthews, *Mazes and Labyrinths* (London, 1922), 4, 23, 52, 71, 81, 88, 89, 91, 93, 94, 98, 129, 151, 156, 162, 181, 197, 202, 211, 216, 225, 233. For material about mazes I confine references to this excellent and accessible book, which has many good illustrations and a good bibliography. In future I refer to it as M.

[11] Livy, I, 1 ; Verg. *Aen.* I, 48 ; Dionys. Hal. *Ant. Rom.* I, 53.

[12] *N.H.* XXXVI, 85. The whole passage (84ff.) is important. Pliny seems to consider a multicursal form, giving the possibility of mistake, original (84).

[13] *Aen.* V, 588ff.

[14] M, 157 (after Deecke). It is countlessly reproduced.

[15] Servius *ad* Verg. *Aen.* V, 602.

[16] Plutarch, *Cato minor*, III.

not mean 'holy', but something which would be expressed today by reference to the possession of *mana*, good or evil magical power. The use of the word for the Troia has been thought difficult to explain,[17] and I do not know any published explanation of it. This is not all. The Troia is also called a ' mystery ' in the ancient sense:[18] that is, it was a ritual associated with the exclusion of the uninitiated. This also has not been explained.

Fortunately however there are certain hints. Elsewhere not the Troia, but something which was very clearly a maze ritual, is associated with ' mysteries '. Apparently at the Eleusinian Mysteries the initiate had to pick his way through something rather like a maze.[19] This circumstance has been compared by Mr Colin Still[20] with Shakespeare's reference to ' forthrights and maeanders ', through which in *The Tempest* Alonso's party has to go to reach its allegorical destination.[21] Both *The Tempest* and the Eleusinian Mysteries, besides much else in art and religion, are shown by Mr Still to be manifestations of what he calls the Universal Myth. The Universal Myth is an expression of the conditions of the soul's journey to perfection ; prophetic thinkers and poets present their allegories of human life in remarkably similar symbols. The maze and the ' forthrights and maeanders ' certainly mean the doubt and sorrow through which men pass on their way to revelations of religious truth. The end of it all is again poetic figures. Blake says that 'sorrow is an endless maze' and Francis Thompson calls thought a labyrinth, until he found the truth of God. Vergil[22] himself sets at the beginning of the Sixth *Aeneid* a skilful representation of the Cretan Labyrinth, pictured on the gates of the Cumaean temple, and clearly meant to symbolize[23] the stage of doubt and confusion through which, as through a gate, many must go, who, like Aeneas, are to reach the Divine truth. The dark wanderings which were an early part of the mysteries correspond well with the ' blind footsteps ' of which Vergil writes.

The idea of initiation then agrees with the suggestion that the maze form in general means exclusion and, correlatively, entry on

---

[17] F. Rasch, *De Ludo Troiae* (Progr. Jena, 1882), 7.

[18] Galenus, *ad Pis.* 930f. (*ed.* D. C. G. Kühn [Leipzig, 1827, vol. XIV, 212]). Cf. A. von Premerstein in *Festschrift für Benndorf* (Wien, 1898), 261.

[19] Colin Still, *Shakespeare's Mystery Play: a study of The Tempest* (London, 1921), 132f., citing Plato, *Phaedo*, 108A ; Lucian, *Cataplus*, XXII.

[20] Still, ibid. [21] Ibid. 27. [22] *Aen.* VI, 24ff.

[23] W. F. J. Knight in *Classical Review*, 1929, XLIII, 212–13.

certain conditions. The Eleusinian Mysteries and the Sixth *Aeneid* give the idea in an advanced stage, not unlike the stage represented by the medieval church mazes.[24] They, again, are not certainly explained and there is disagreement.[25] These mazes certainly seem to have been used for a kind of pilgrimage; the tracing or treading of a maze was probably imposed as a penance, and the nucleus is sometimes called Heaven or Jerusalem.[26] One maze is said to represent the world, and the track through it ' the natural man's path to spiritual life '.[27] Apparently ideas of exclusion and entry belonging to the maze were adopted and used by the Church : for the maze seems to have been brought within ecclesiastical sanction from a secular, perhaps even a pagan, existence outside.

A maze can be a symbol of secrecy.[28] This part of its content is found in the application of the maze motive to the story of Rosamund, an illicit love of Henry II of England. He built her ' Rosamund's Bower ' at Woodstock in the form of a maze, and visited her there.[29] In this story scandal and folklore seem to enjoy equal places : though what the truth of each is it is hard to say.[30]

---

[24] M, 54ff. [25] M, 66ff, where possible uses are discussed.
[26] M, 60, 64, 66, 68. [27] M, 57 ; cf. 68.
[28] M, 53, 96, 194 ; cf. Knight, ibid. [29] M, 164ff.

[30] The maze symbolism seems somehow to be associated with maidenhood. Cf. M, 150, for the name ' Nun's Fence '. A vignette on the Tragliatella oenochoe seems to require this explanation : if it has relevance to the magic walls of the Truia, it may represent the correlatively opposite magic. In North European and other mythology the overcoming of difficulties by a hero, often with the help of a magical horse (v. infr.), frequently precedes union with some hidden princess. Cf. G. W. Cox, *The Mythology of the Aryan Nations* (London, 1870), I, 115, 151ff., especially 154 ; L. Laistner, *Das Rätsel der Sphinx* (Berlin, 1889), II, 51, 117f., 143ff. ; A. de Gubernatis, *Zoological Mythology* (London, 1872), 293ff., 297 ; E. Jones, *On the Nightmare* (London, 1931), 269ff. Cf. E. Hommel in *Orientalistische Literaturzeitung*, 1919, XXVI, 63ff., who from Babylonian and Cretan evidence connects the spiral labyrinth with human anatomy and with the underworld, the one being the microcosm of the other.

Mr W. J. Hemp tells me that in his opinion the suggestion made by Mr T. Cyriax in the *Archaeological Journal*, 1921, LXXVIII, 205–15, that there is reason to suppose anatomical and genetic symbolism in the form of some barrows, is strongly supported by the plan and certain details of Bryn Celli Ddu. At the same time he considers that the plan represents a step in a long process of development, and that many of its features cannot be associated with any such symbolism. Cf. especially Cyriax (ibid. 211) : ' To enter the next world, therefore, the spirit would have to be *re-born* ' . . . ' The object of the tomb-builder would have been to make the tomb as much like the body of a mother as he was able '. The article is important and seems convincing.

In describing the performance of the Troia in Sicily before the Trojans reached Italy, Vergil[31] apparently says that Iulus introduced it ' when he was surrounding Alba Longa with walls '. Servius[32] seems to have thought that there was a difficulty here ; as if Vergil might be supposed to mean that the Troia originated in Italy, though of course it had previously been performed in Sicily. He therefore says that Vergil means that it was merely revived at Alba. This does not matter very much, but it seems to be an instance of one kind of difficulty which betrays a secret. Vergil usually means something definite by his words, and if he means what he says here, and is right, the maze movements of the Troia were at first part of a foundation ceremony. If so, the idea of exclusion is very appropriately represented.

At this point it is worth while to mention the Salian dance. At certain times the Salii danced round Rome, armed, but carrying weapons more like large drumsticks than anything else, with which they beat their shields.[33] Their dance has been called a ' Troia on foot '.[34] This is interesting, because the Salii take part in a procession round the city,[35] an ' amburbium ' to preserve it from harm in a time of danger ; that is, a function very like the function here suggested for the Troia. It has been thought that the ' tribuni celerum ', the commanders of the Roman cavalry, must be present at the Salian rite.[36] It is recorded that both Salian dance[37] and Troia[38] were introduced into Italy from

---

[31] *Aen.* v, 596ff.

[32] *ad.* Verg. *Aen.* v, 598 : ' rettulit : innouauit quod ante iam fecerat '.

[33] J. E. Harrison, *Themis*[2] (Cambridge, 1922), 194ff. Part of the function of the Salii, who are comparable to the Curetes, may have been in some sense to frighten away evil spirits with their noise. On the Tragliatella oenochoe dismounted performers may have long drumsticks. On the place of the Salii in ancient circle magic and their connexion with the Troia cf. S. Eitrem, *Opferritus und Voropfer der Griechen und Römer* (Christiania, 1915), 27f.

[34] A. von Premerstein in *Festschrift für Benndorf*, 265.

[35] Lucan, Phars, I, 592–606. Canon Stacy Waddy has suggested that in the Hebrew Psalms, interpreted as liturgies of service, the mention of the shield usually implies a ritual ' march round ' some sacred person or object : cf. *Psalms*, v, 12, xviii, 30f., xxxiii, 20, lxxxiv, 9. Wheels seem to be defensive symbols sometimes ; cf. W. Simpson, *The Buddhist Praying Wheel* (London and New York, 1896), 116, 258, etc., and supr., note 3.

[36] E. Meyer, *Kleine Schriften*, 1924, II, 283, citing *C.I.L.* I, pt. I[2], 234 (the *fasti Praenestini* ; accepting the view of von Premerstein, 264, which had been criticized by J. Toutain in Daremberg et Saglio, *Dict. des Ant.* v, 493–97, s.v. Troia.

[37] Festus, 329A.

[38] Verg. *Aen.* v, 545ff., etc.

lands to the east of it. The name of the inventor of the Salian dance is interesting. It is reported to have been Saon,[39] the ' saviour ' or ' protector '.

It appears then that both the Salian dance and the Troia were meant by their intricate armed movements to strengthen the defence of a city by supernatural means. They emphasized in fact the effective distinction, so important in Italy, between the powers of without and within.[40] The Troia is certainly a kind of ' lustratio ' : the word could be employed for magical movements round a defended place. The action must have been thought to create an additional and abstract wall of power to exclude hostile influence.

This now shows why the Troia could be called ἱερός and a ' mystery '. It also shows why one of the many strange names given to mazes is justified. They are called ' walls ' in many places. In England there are at least four instances of the name ' walls of Troy ',[41] and in Finland for example a maze is called ' Giant's Fence '.[42]

This aspect of the maze form has been overlooked. That is, investigators have emphasized the peripheral movements of ritual, and have noticed the penetrative movement from the outside of a maze to the inside, without sufficiently regarding the quite correlative meaning of ' exclusion ', contrived by the peripheral movements, and conditioning the penetration. A maze is in fact a wall of great magical strength with an entrance designed to be difficult for the unauthorized.

The name ' wall ' therefore belongs to mazes significantly. Another name, ' Troy ', very frequently applied to them, has been more adequately discussed. The theory that this name was given in literary reminiscence of the classical connexion of the Troia with the Homeric Troy is in conflict with the facts, especially with the wide distribution of the name and its apparent association with the older folklore of areas

---

[39] O. Gruppe, *Griechische Mythologie und Religionsgeschichte* (München, 1906), 1, 199, note 11 ; Salius danced ' in honour of Alesus (ibid. note 12 : cf. Athena " Alea ", which probably means " defender ") son of Poseidon '—who is of course guardian of city walls. Cf. ibid. 225. D. Servius (*ad* Verg. *Aen.* 11, 325), says that the Salii were at first called Sai, when they looked after Penates in Samothrace. This function—they were *penatium antistites*—betrays defensive connotations.

[40] Cf. W. Warde Fowler in *Anthropology and the Classics* (Oxford, 1908), 174, etc. Cf. Eitrem, 6, 18, 29ff., on the question whether the original purpose of these rites was cathartic, as he thinks, or apotropaic, according to Eitrem a developed function.

[41] M, 73, 78, 87, 92 : cf. 201.

[42] M, 150f. In North Europe ' stone fence ', ' nun's fence ', ' round castle ', ' giant's castle ' are found : there is also a ' stone dance ' connected with mazes.

outside the Roman occupation.[43] It is unsafe to attribute the introduction of the maze and its ritual practices—thought to be connected with Morris dancing—to Roman influence. This derivation is unlikely in Britain and scarcely possible in North Europe, though the influence of the Romans, who have left careful representation of mazes, sometimes with a minotaur—or centaur—in the nucleus, at many places, should not be excluded altogether.

Literary equations, then, will hardly explain the application of the name ' Troy '. It is more likely to express some description of mazes or maze movements. This suggestion has been made before. It has been proposed[44] more than once that the name of a maze in Wales, Caer Droia, ought to be derived from a root meaning ' turn '. In this context it is not always remembered that in 1840 Klausen[45] suggested that the Italian Troia should be connected with a Latin verb ' trouare ', which is said to denote some kind of active movement. It seems scarcely possible to decide the exact early meaning of the maze name 'Troy'; but the facts seem to show that it is a name which ultimately belongs to mazes, not a literary reminiscence of the city of Troy from which Roman writers derive their Trojan game.

This solves one difficulty, but makes others. If ' Troy ' is an original name for mazes in North Europe, it is satisfactory that a similar suggestion for Italy has been made. On the other hand, other names from the Trojan cycle of legend are also applied to mazes, especially the name ' Iulus '[46] in different forms. This is not a great

---

[43] M, passim, especially 147ff.

[44] M, 92, attributing the suggestion to W. H. Mounsey, who made it in 1858. I owe the following information to the kindness of Professor J. E. Lloyd. In old Welsh literature the city of Troy is sometimes styled ' Caer Droia '; and the same name is also applied, for reasons difficult to apprehend, to a maze or labyrinth. On the second point Professor Lloyd refers to a notice, with plan, furnished by Peter Roberts, *Cambrian Popular Antiquities* (London, 1815), 212f.; who also suggests that the real connexion of the name is not with Homeric Troy, but with the word ' tro ', ' turning '. Mr W. J. Hemp kindly contributes the following note:—' The ordinary Welsh word for " to turn " is " troi ". The best dictionary (Anwyl) reads as follows:—" Troi : to turn, to revolve, to stir, to convert, to become, to plough. There is also :—*tro -ion -iau* ; turn, curve, screw, twist, time, occasion, walk, tour, conversion. *Troad ;* bend, turning, flexion " '.

[45] R. H. Klausen, *Aeneas und die Penaten* (Hamburg, 1839–1840) II, 820ff. Rasch (*De Ludo Troiae* [*Progr. Jena*, 1882], 7), commenting on this, suggests a root meaning 'turn'. Toutain (*Dar. et Sagl. s.v.* TROIA) accepts some such origin for the name.

[46] M, 71, 78, 90, 173, 230.

difficulty, because there is no reason why the original name of Troy should not have attracted other names by a literary application. What will not account for all the facts may account for some. Another difficulty is more interesting. If the Trojan game in Italy had nothing to do with Homeric Troy, the appearance of two such names, quite unconnected but in circumstances which led the Roman world to derive the name and the practice of the Troia from the city of Troy, is at least a very strange coincidence. So far as certainty is concerned it must remain a coincidence. But there is a suggestion which can be made diffidently. Many places in Europe are called ' Troy ', or something very like it, because they were associated with mazes or maze rituals. There were places in Italy called Troy, and it is hard not to think that the reason was the same. That is, in many places and in many languages this name was given from the existence of a maze. It is only necessary to add one place to an already long list, a place which happened to become famous : and to suppose that the land of Troy and later the city itself were called Troy after the Trojan game.

This is a daring proposal,[47] and it is hardly justifiable if nothing is known about any ' magical walls ' or cognate ritual at the city of Troy. But the condition has only to be stated to be admitted. Troy, of all places, had the most famous magic walls in the world. There is certainly no contemporary record that the Trojan game was ever played there, but there are hints that the magic circle was given some treatment of this kind. Achilles dragged Hector at his chariot three times round the walls,[48] to unwind the magic,[49] an intention which can be paralleled.[50] Homer, of course, disagrees, but there are very characteristic reasons for his disagreement. He improved his poem, by his change in the story, successfully enough. Now what Achilles was doing with Hector seems to have been partly understood by a Latin writer, who, having more early Greek literature for reference than we have, said that Achilles ' lustrauit ' Troy with Hector's body.[51] This means a kind of purification, and perhaps in the opposite sense a kind

---

[47] I have made it already in a letter to *The Morning Post* (13 September 1930), and in *Classical Philology*, 1930, XXV, 362, note 3.

[48] Sophocles, *Ajax*. 1129ff. ; Euripides, *Andromache*, 107; Verg. *Aen*. I, 483, cf. II, 272 ; Quintus Smyrnaeus, I, 12, 112.

[49] W. R. Paton in *Classical Review*, 1912, XXVII, 45ff.

[50] Cf. W. Simpson, *The Buddhist Praying Wheel*, 88ff., 103, 146f., 152, 180, 183, 188, 290f.

[51] *Culex*, 324. Cf. Plin. *N.H*. VIII, 161.

of exorcism. Achilles intended to work an unfriendly effect on Troy by his circular movements. It is interesting that Seneca[52] uses the noun from which the verb is formed in writing about the Trojan game, as, according to him, it was played at Troy. He calls it ' sollemne Troici lusus sacrum' played ' stato lustri die '—an annual or at least regular performance on a fixed day of ' lustration '. This is of course the friendly sense of the word, and it is applied here, apparently, to a ritual meant to sustain, like an Italian ' amburbium ', the effective distinction between the powers of without and within. Seneca affords strong evidence that he used old material now lost, and he probably had sound authority for his strange indication.

At this point it is worth while to remember that the Salian dance has been called a ' Troia on foot ', and the Troia itself a kind of ' Pyrrhic ' war dance. It is also worth while to remember that Saon, ' the protector ', who is said to have invented the Salian dance, and the Sai who first performed it, are recorded to have belonged to Samothrace;[53] that in that island the heroic genealogies of Troy and Boeotia, where also there were magic walls, interlock;[54] and that the Roman king Tarquinius Priscus improved the organization of worship at Rome, being ' mystically imbued with Samothracian cult doctrines '.[55] The Trojan game was believed to come from Asia Minor, and there is a paradoxical example of this, for though it is generally agreed that the rite had been known in Italy very early, as the Tragliatella vase alone is enough to show, Sulla is often supposed to have introduced it into Italy from its eastern home.[56]

All this is coherent enough, and that is the most that we can expect, when we are in search of a required generalization, and the evidence is scattered and not very articulate. This is not surprising, since the nature of a ' mystery ' enjoins reticence on those who believe in it. It is time to return to Bryn Celli Ddu, but on the way back we are met by the question whether any connexion can be suggested between rites and beliefs of classical antiquity and Bronze Age Britain. Such a suggestion exists, though it is naturally hard to demonstrate its

---

[52] *Troades* (Teubner text, ed. R. Peiper and G. Richter, Leipzig, 1921), 777ff.

[53] Gruppe, vol. I, 199 note 11 ; and other references at note 39, supra.

[54] W. R. Halliday in *Liverpool Annals of Archaeology and Anthropology*, 1924, XI, 20.

[55] D. Servius ad Verg. *Aen.* II, 296 ; cf. ad 325 and III, 12 (where the Samothracians are said to be akin to the Romans).

[56] Plutarch, *Cato Minor*, III, is sometimes thought to suggest this : but it is by no means a legitimate inference from what Plutarch says.

application to megalithic man. It is this. Allcroft[57] has expressed neat equations between the rites of British tumuli-folk round their tumuli, the worship of the Roman Consus[58]—a *Neptunus equester*—whence developed the horse races of the Roman circus, and the Homeric practice of encircling a new grave with horses. In all these acts peripheral movements, helped apparently by the peculiarly sinister or potent qualities which horses are believed in early thought to possess,[59] seem to be used to complete a burial. The plan is very like the plan of the Troia. It is again a distinction between the powers of without and within. The practice is related in the same category to the dragging of Hector round Troy, by which Achilles meant to infringe, not to enforce, the same distinction. Even Homer allowed Achilles to drag Hector three times round the barrow of Patroclus. The horses continue the parallel with the Troia. On the Tragliatella vase not only are horses ridden by some participants, but horses are pictured on the shields of those of them who are dismounted. The reason is clear. Horse magic helped to create the needed distinction. Horses taking part in peripheral movements were expected to reinforce the imaginary wall which the movements were thought to create. There is a close parallel. A fairly well defined area exists in which the familiar superstitious beliefs about horses are held,[60] and south of it these beliefs seem to be applied to other animals, in particular lions.[61] Herodotus[62] records that the Sardians, who were near the margin between these territories, carried a lion round their city to strengthen the defence.

If Achilles encircled the tomb of Patroclus to complete the act of burial, he was clearly enforcing the distinction between the dead and the living. He, or those who invented the ritual—in so far as such methods can be said to be invented—clearly or dimly understood that this distinction was necessary if the dead were to rest, and, perhaps, if they were to let the living rest, also. At first Patroclus had failed in this respect, for his ghost returned. Here is the arrival back again

---

[57] A. Hadrian Allcroft, in *Archaeological Journal*, 1921, LXXVIII, 325ff. Cf. Eitrem, 23, 27.

[58] Cf. W. F. J. Knight in *Classical Philology*, 1930, XXV, 365, note 4.

[59] L. Malten in *Arch. Jahrb.*, 1915, XXIX, 179ff. I owe my knowledge of this reference to the kindness of Professor A. D. Nock. I have investigated the incident of the wooden horse, regarded as a magical attack on the wall of Troy, in *Vergil's Troy* (Oxford, 1932), 105ff.

[60] Malten, 251f., 254. [61] Ibid. 253f. [62] I, 84.

at Bryn Celli Ddu. The burial must be made complete, and an important part was the ritual which should seal, as the walls of Troy were the seal of the city,[63] the area of the tomb. The place must be magically shut. But there must be a way in, to bring offerings, and possibly to perform other acts of tendance. So with the exclusion went the correlative principle of conditional penetration, and the maze or spiral is justified.[64]

There is at least something definite which it is fairly safe to say by way of conclusion. The patterns of Bryn Celli Ddu should be considered in a large context of the later history of symbols and their ideas. Induction from examples, subject of course to all the uncertainties of that method, brings us to one generalization : that the maze form habitually implies correlative notions of exclusion and conditional penetration. Deduction then offers us the inference that the same notions, however inchoate and confused, actuated megalithic man. How each of the symbols at Bryn Celli Ddu was meant to work in creating the correlative effects of their magic I do not attempt to decide. It is to be supposed that they were expected to create a field of magical force of the right kind. The pattern stone itself may have been meant as a chart to direct ritual dancing at the foundation ; and it may afterwards have been dug into the monument, in the hope that its sympathetic presence might help to maintain the conditions originally intended by

---

[63] The wall was called ἱερὸν κρήδεμνον ; κρήδεμνον means a veil or the seal of a jar, literally a ' head binding '. (W. R. Paton in *Classical Review*, 1913, XXVII, 45).

[64] For the point of contact between stone circles and foundation rites, cf. together especially M, chap. XVII, *Stone Labyrinths and Rock Engravings*, 147ff., with figs. 124ff, and D. L. Burdick, *Foundation Ceremonies and Some Kindred Rituals* (New York, Abbey Press, 1901), chap. XL, *Circular Movements and Symbols*, 149ff. Burdick's book is unfortunately out of print and I have not found a copy in England. I owe my knowledge of the text of it to the very great kindness of Dr Eugene S. McCartney of the University of Michigan. The comparison of these two chapters strongly suggests that the principle of the magic circle, and ideas of exclusion represented also by maze formations, were of great importance in the plans of the builders of early stone monuments. The Trojan game was itself performed as part of the funeral rites of Anchises, according to Vergil. After its revival, it was sometimes performed at funerals ; for example round the graves of Caligula and Drusilla (Dio Cassius LIX, 11). Cf. Pliny, *N.H.* XXXVI, 84 : he thinks a labyrinth specially suitable either for a palace or a burial, or—as according to him most people believed—as a structure sacred to the sun. Probably all the suggestions are partly right. Cf. ibid. 90ff., where he quotes Varro on the labyrinth at Porsenna's tomb. With 92, where bells are mentioned, many uses of bells apparently defensive may be compared.

the dance. But it is better not to go too far : for if footsteps should miss a turning in the blind march, there would then be a longer path for them to retrace.

### Note by the Editor

Some of the medieval English turf-cut mazes are associated, at any rate topographically, with the walled villages of prehistoric times. The maze on St. Catherine's Hill near Winchester lies within the Iron Age camp on the hill. There was probably a maze between Old Sarum and Salisbury, as the name Mizmaze Hill occurs there on the Ordnance map of 1806–8. Breamore maze in Hampshire is on a hill which is covered with Celtic fields, and is close to a long barrow. It is a long way from the medieval and modern village. If it is true, as is generally believed, that the sites selected by medieval fairs go back to a remote antiquity—Yarnbury and Tan Hill are instances—there may be a significance also in the other associations cited above. It would be interesting to collect and analyze the instances of fields called Troy Town. Do they too occur in ' prehistoric ' surroundings ?

# Notes and News

## THE BATTLE OF MOUNT BADON

In this note an effort is made to find a site for the celebrated battle of Mount Badon, in which Arthur is said to have defeated the Saxons, according to one account; the last of twelve great British victories, according to another.

It would be as well first to state the only grounds which can be found for believing in the historicity of Arthur. On the face of it, it is exceedingly doubtful. Arthur is mentioned by name by no author before Nennius in his *Historia Britonum*, written in the middle of the ninth century. (Unless the account of Arthur comes directly from one of the written sources which Nennius copied, and this is a matter of guesswork). He is not mentioned by name by Gildas, who was born in the year of Mount Badon and who does mention the battle. But if Arthur were not an historical character, he must have been an important mythical hero. The one argument which proves that he really existed is that there is no mention of this mythical hero until even later than the History of Nennius. If Arthur had first appeared as a hero and later Mount Badon had been added to his exploits, it would appear to be an obvious example of the common dislike of anonymity in heroes and nothing more than the attempt of someone with no feeling for historical accuracy to find a name for the conqueror of the Saxons. The process is a very usual one, but in fact the process is here reversed. Finally, it has been pointed out that the failure of Gildas to speak of Arthur is not an insuperable difficulty, as Gildas was not given to mentioning historical characters by name until he comes to the princes of his own day, whom he wishes to denounce. (Oman, *England before the Norman Conquest*, p. 211). Gildas' silence, however, does show that it is extremely improbable that Arthur was a ruler over very vast domains.

There are three sources for a consideration of the date of Mount Badon. The first, and clearly the most reliable, is from Gildas, who mentions that the battle was fought on the date of his own birth.*

* Ex eo tempore nunc cives, nunc hostes, vincebant ut in ista gente experiretur Dominus solito more praesentem Israelem, utrum diligat eum, an non; usque ad annum obsessionis Badonici montis, novissimaeque ferme de furciferis non minimae stragis, quique quadragesimus quartus ut novi orditur annus, mense jam uno emenso, qui et meae nativitatis est. Gildas, *De Excidio et Conquestu Britanniae*, 26

Unfortunately, his style at this point reaches an obscurity deep enough to make him notable as a writer apart from anything he has to say. It is impossible to say for certain whether the ' forty-fourth year with one month added ', refers to a period before the writing of the book (*i.e.*, the age of Gildas), or to a period after the appearance of Ambrosius Aurelianus, of which he has been speaking. The first conjecture would almost certainly give us about the year 502. The second itself depends on the date of the appearance of Ambrosius. If we follow Mr Nicholson and take this as 467, Mount Badon would have been fought in 511. If we accept the interpretation suggested in ANTIQUITY, June 1931, pp. 238–9, we get 499 for the battle.

The other two sources are far later. The ' Annales Cambriae ',[1] an interpolation in one manuscript of Nennius' History, gives the date as 515, 516 or 518. (The exact date depends on the reckoning of the unspecified year 1 of the Annals, which is either 444, 445 or 447). Nennius gives no date, but it is possible to find some light in a passage immediately preceding the account of Arthur :—' At that time the Saxons greatly increased in Britain, both in strength and numbers. And Octha after the death of his father Hengist, came from the West part of Britain to the Kingdom of Kent and from him have proceeded all the kings of that province. Then Arthur fought against them in those days'. According to the Anglo-Saxon Chronicle Hengist died in 488 and was succeeded by his son, Aesc, who reigned for 24 years, that is till 512. Unless Octha is the same as Ocga, a son of Hengist, mentioned by Florence of Worcester (died in 1118 and certainly used earlier sources in his genealogies) he is probably Octa, who, according to Bede, was the son of Aesc and succeeded him. This again brings us to the second decade of the sixth century.[2]

It is time to turn to the Saxon accounts, which are two. Bede, who died in 731, copied Gildas. He had, however, his own interpretation of the date of Mount Badon, which he places as 44 years after the coming of the Saxons. This would give us a date about 493. But it is reasonable to suppose that Bede was as much puzzled by the passage as we are, and tried his own hand (a very free one) at its solution. At any rate it is difficult to fit his words :—' quadragesima circiter et

[1] Probably late 10th century (Chambers, *Arthur of Britain*, p. 13).

[2] The answers may be summarized thus : Nennius (9th century) about 512 ; 'Annales Cambriae' (10th century) about 516; Gildas (6th century) between 499 and 511.

quarto anno adventu eorum in Britanniam'—into the text of Gildas, as we should have to do if we supposed that our text is a corrupt one and that he had the original. The Chronicle, of course, does not mention the battle. But this is no argument that it did not exist. Gildas is proof that, whenever it might be, it certainly was fought.

Still the Chronicle is all important. It is the only straightforward account of the invasions and it is obviously necessary to turn to its narrative for this period. The only information of that time is of the movement of the West-Saxons from the South. It is impossible to do justice here to the problems latent in those words and I can do little more than say that I believe that myths of this kind do not grow up out of nothing and that, while I may be ready to jettison Port, the founder of Portsmouth and Wihtgar, the conqueror of Wight, I hold the faith of those who see in Cerdic and Natanleod something more than the inventive genius of a people faced with obscure names to explain. After all, why did they concentrate solely on explaining Netley Marsh and Charford ? Why were Downton, Salisbury and Barbury neglected ? But it will be obvious in the course of this note that, if the Avon advance is entirely discounted, the whole thesis falls to the ground.

Our first task in examining the Chronicle is to see whether there is any period equivalent to that which is mentioned by Gildas as following Mount Badon, a period during which ' our foreign wars ceased, but not our civil strife '. (Be it noted that Gildas did not claim that the Saxons were driven back into the sea, but only that the wars ceased). It is obvious that there is such a period. From 519, when the Saxons won the battle of Cerdics ford, to 552, when they defeated the Britons at Salisbury, there is a time of consolidation, not of progress. (In 527 comes the mysterious battle of Cerdicsleah, but this did not lead, as far as can be seen, to any further advance in that region). The dates of the Chronicle should not be taken too seriously. In the middle of this period it is noted :—' A.D. 509. This year St. Benedict, the abbot, the father of all monks, went to Heaven '. The date is 34 years out as he died in 543.

But the stay in the advance seems significant. It is surely more than a coincidence that in both British and Saxon accounts there is a halt in the first half of the sixth century.

This study of the dates of the invasion may shed some light on the problem of Bokerly Dyke. It is certain that the Dyke was built after the Roman departure from Britain, (Pitt-Rivers, *Excavations in Cranborne Chase*, III, 14) but so far excavation has given us no *terminus*

*ad quem*. The Dyke, however, is a magnificent achievement, as anyone who stands on the summit of Blagdon Hill will admit. It cannot have been built in a day. It needed time for planning. It is possible also that it was part of a system which included Combs Ditch (Sumner, *Local Papers*, pp. 87–107). It may be connected with the Wansdyke, though this is more doubtful. As it stands the Dyke obviously protects from the north and east the populated area of Cranborne Chase and the downs to the south. Mr E. T. Leeds has suggested (HISTORY, July 1925) that it was built to resist a later thrust from the Saxons of the Thames valley through Salisbury. This is, of course, a possible explanation, but it would serve as well to protect this district from an attack coming from further south. From the map it looks as if both assaults would turn its flank, the Salisbury one at its northern end, the Avon one at its southern end. But the Dyke was really a well-planned line guarding a gap between the forests of Cranborne Chase and Holt and to this day its right flank rests on Martin wood, a remnant of the latter forest. An invader from the direction of Charford, if he wished to keep clear of woodland, would have had to cross Bokerley to reach the villages which then stood in the modern Dorsetshire.

But Mount Badon cannot be on the Dyke. It is too far from the scene of the Saxon advance to the Avon valley. As far as can be seen it would be possible for the Britons to have sacrificed the land between the downs above Charford and Blagdon Hill without giving up much of value. (This district was not desolate. There is, for example, the Romano-British farm at Rockbourne. But it was not thickly populated). But once past the Dyke to the west and we enter a country which obviously merited a stern defence. And the Saxon halt after 519 would have given the breathing-space needed for constructing this work.

Of the words in Gildas, 'obsessionis Badonici montis', the second seems much the least important. There is no reason to suppose that the Saxons when they settled on the land would have preserved the British name. This error has led to all the unsuccessful accounts to locate it: Bath, Badbury Rings, Bowne Hill, and so forth. They have nothing else to recommend them and some, such as Bath, are quite impossible. The Mons, however, could not disappear. But if we expect to find a mountain here we shall be disappointed. There is a clue in the Anglo-Saxon translation of Bede ordered by King Alfred (Bede, it will be remembered, copied Gildas), where the words used are *Beadonescan dune*. A down is a likely enough place for a battle in the district near

Charford on the Avon and it is to the downs above Charford that we should turn.

But, of the three words, 'obsessionis' is the most important. Mount Badon was rather a siege than a battle. There is nothing approaching a Roman or Romanized fort in this district and the Britons must have been holding one of the old hill-top forts of their ancestors. There are two above Charford, both at a short distance. The most imposing is certainly Clearbury Ring, but this is most unlikely as it is too near Salisbury. A far more probable site is Whitsbury camp.[3] This has not a very imposing position, but it stands at over 400 feet at the end of a down. Trees cover the fortifications from view until you walk into it, when it will be seen to be a magnificent camp with two ditches, and the walls standing at their highest point 25 feet above the ditch. It is here, I think, that Arthur defeated the Saxons somewhere about the year 510 and gave his people a little rest from the invader.

ROBERT BIRLEY

## SOME MONUMENTS OF ARMENIA

Armenia has ever been a land over which battles have been fought, and as the ages have advanced these battles seem to have increased rather than to have diminished, till, with the twentieth century, another and newer type of war has begun—a scientific war of words. But the ardour of the opposing sides is no less great than that shown by Seljuks and Byzantines, by Turks or a Christian minority population. It was over Armenia that the severest struggles of religion were waged ; it is over Armenia that the world of art-history has argued of recent years, with unusual vigour, as to the origin of certain systems of architecture and certain types of decoration.

The one side in this argument, led by the eminent Austrian authority Strzygowski, maintains that the dome over a square plan, the whole range of formalistic, non-representational art, the love of such techniques as low relief carving and enamel work, bright colouring and an absence of modelling and half-tones in painting, are to be attributed to the East. The dome above a square plan was, according to

[3] Sumner, *Ancient Earthworks in Cranborne Chase*, pp. 20–22, gives an account of Whitsbury camp. He suggests that the raising of the rampart on the southeastern side was carried out by the Britons against the Saxons. But it is difficult to see the use of raising only one part of a rampart or a fort on an open down. The use I have made of this volume, which for anyone who knows the district is an incalculable blessing, will be obvious to those who have read it.

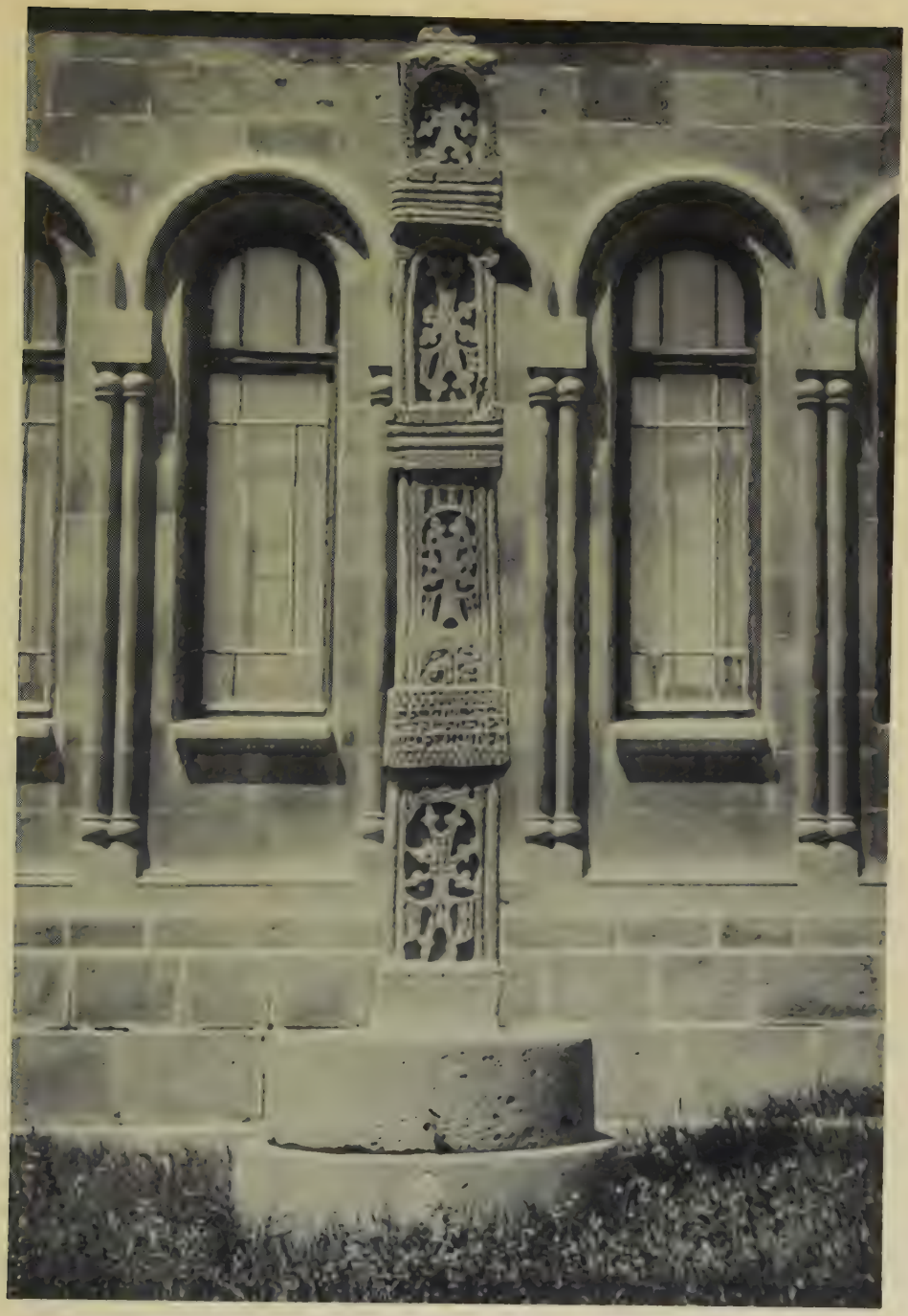
him, first conceived in the region to the northeast of Persia, where it served as roof to a wooden structure. The transition from the square plan to the circle, necessary for the construction of the dome, was accomplished by laying a beam across the corner and so turning the square into an octagon. By repeating the process, it could be turned into something approaching a circle. Low relief carving, especially a certain type of slant carving (*Kerbschnitt*), was originated in the same region.

These systems travelled south and west, to be adopted in other countries, where the most convenient local material replaced the original wood. Most important of these regions was Armenia, where the dome over square plan and ornament in low relief was developed to a very marked degree. Had it not been for Armenia, Strzygowski maintains, Byzantine architecture, and with it the great domed buildings of the west—St. Peter's and the Gesu at Rome, even St. Paul's in London—would never have been built, while St. Sophia at Constantinople, the mightiest domed building of the world, would have been a wooden roofed basilica or at most a domed building of circular plan, like the Pantheon.

In opposition to these Eastern theories are those of Rivoira, who attributes everything to Rome; and those of the more conservative school, who admit eastern influence, but attribute the initiative and development to Hellenistic culture.[1] And be it said at the outset that there is little more than brilliant theory and reasoning to justify the oriental theory to the full, for in Armenia and the East there are no surviving buildings as old as those in the Mediterranean region. As regards low relief carving and the accompanying non-representational systems of ornament, however, all authorities now concur in admitting eastern influence, and even if Armenia did not originate them, the systems were certainly developed to a very great extent in that country. A glance at the pillar preserved in the court of the old patriarchate at Etchmiadzin proves the popularity of such ornament at quite a late date (pl. 1). The cross has become the main motive, though the interlaced patterns which surround and adorn it are to be traced back to a date much earlier than the birth of Christianity, when they formed the basis of an art which was universal in the Near and Middle East. In

[1] For a summary of the discussion see Dalton, *East Christian Art*, ch. 1 and 2. For the eastern point of view, see Strzygowski, *Eastern Origin of Christian Church Art*; for the western: Rivoira, *Moslem Architecture*.

PLATE I



PILLAR (16TH CENT.) OUTSIDE THE LIBRARY, ETCHMIADZIN
Pls. I–VII, *ph.* O. G. S. Crawford

*facing p.* 464

PLATE II

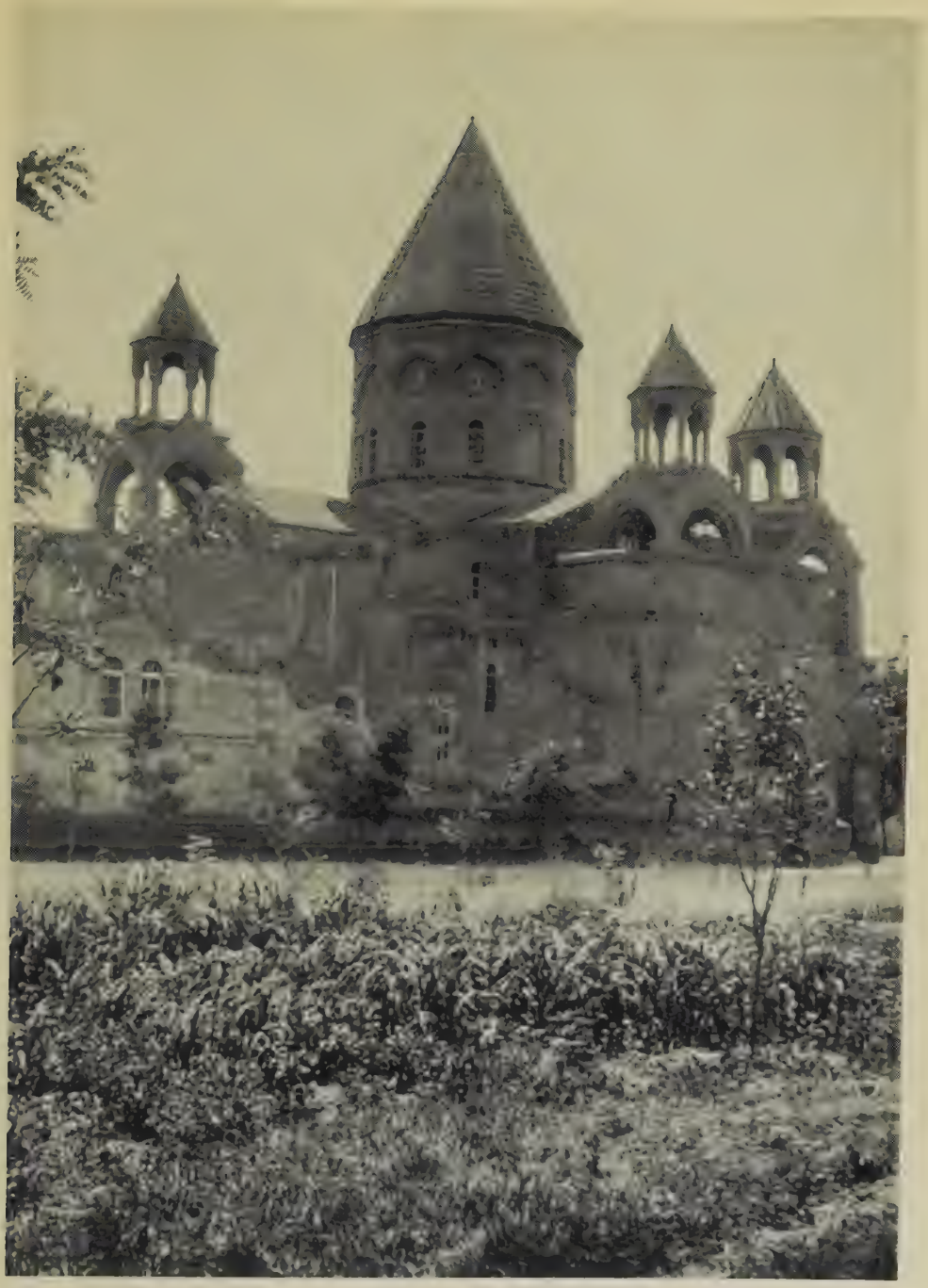
CAPITALS (7TH CENT.) AT ZWARTHNOTZ

# PLATE III

CUNEIFORM STELE, ZWARTHNOTZ

PLATE IV

QUADRANGLE OF MONASTERY AT ETCHMIADZIN



THE CATHEDRAL, ETCHMIADZIN ; THE BUILDING 7TH CENT., THE DOME 13TH CENT.

WEST PORCH OF THE CATHEDRAL, ETCHMIADZIN (17TH CENT.)

FORTIFIED CHURCH OF ST. RHIPSIMA, ETCHMIADZIN (AFTER 7TH CENT.)

WALL OF ROMAN FORT, THIEFSIDE HILL, CUMBERLAND

(*See* p. 466)

PLATE IX

AIR PHOTOGRAPH OF ROMAN SITE, THIEFSIDE HILL, CUMBERLAND

CHURCH AT NICOSIA, CYPRUS

Northwest corner of west front, showing doorway to north chapel and moulded jambs of west door on right

(*See* p. 469)

YARNBURY CAMP

Section of bank showing four holes presumably for supporting upright timbers for the revetment of the chalk wall. The holes were 2–3 ft. deep from the original surface, 12–15 ins. diameter, and about 3 ft. apart. The old surface-line is shown and it can be seen where it was broken through in digging the next hole (partially under the bank and not re-excavated). (*See* p. 471)

*Ph.* W. E. V. Young

# PLATE XII

HORN FOUND AT ROMSEY, HANTS, NOVEMBER 1931

(*See* p. 474)

PLATE XIII

SCULPTURED ROCK, TRAPRAIN LAW, HADDINGTONSHIRE, SCOTLAND

(*See* p. 474)

PLATE XIV

SCULPTURED ROCK, TRAPRAIN LAW, HADDINGTONSHIRE, SCOTLAND

HEMBURY FORT: STAKES RESTORED IN THEIR ORIGINAL HOLES
(*See* p. 475)

BALLOON PHOTOGRAPH OF MEGIDDO

Showing the Town Gate and the area to the south and west. (*See* p. 512)

*Copyright Oriental Institute of the University of Chicago*

early Christian times this art was developed to the full, and we find crosses which are closely allied to the Armenian ones in the sixth and seventh century Nestorian churches of lower Mesopotamia.[2]

None of the actual churches that survive in Armenia are much older than the seventh century, though they may reproduce earlier plans. One of the most important of them, the ruined church of Zwarthnotz (641–661), between Etchmiadzin and Erivan, has a quatrefoil plan, surrounded by a circular ambulatory. For Strzygowski it is a monument due to Armenia and the East. Rivoira would assign it to Rome, while M. Blochet, in his recent book on Moslem painting, seeks to attribute it, together with everything in East or West, of whatever style, to ancient Greece. Hellenistic, or rather Byzantine, influence at Zwarthnotz is not to be denied, however, for some of the capitals bear Greek monograms (pl. II). The low carving is Eastern ; the basket form of capital (that to the left) was developed in Mesopotamia before it came to the West, while the spread-eagle (on that to the right) is a motive which is probably to be traced back to Hittite Asia Minor, whence Byzantine and Western examples are equally derived. But whether these influences came to Zwarthnotz direct from the East, or from the East by way of Byzantium, is a question over which the pundits must squabble until extensive excavations dealing with the early Christian period have been undertaken in Armenia. A large stele with cuneiform inscription, now preserved within the Zwarthnotz enclosure (pl. III), points to Eastern influence at an earlier date, and shows that the part of Armenia which lies to the north of the Araxes was formerly under the sway of the powerful state of Van, between that river and the Tigris.

Some of the most famous Armenian churches, most notably those of Ani and that on the Island of Achthamar, Lake Van, are now in Turkish, not in Russian Armenia, and as much of the region is depopulated, access to them is by no means easy. Hundreds of others lie scattered over this once prosperous country, more of them on the Russian than on the Turkish side of the frontier and Etchmiadzin —Vagharshapat is the traditional name—which was before the war the home of the Patriarch and the ' Rome ' of the Armenian Church, was naturally well supplied. With the exception of the cathedral, her

[2] See the author's article on Excavations at Hira in ANTIQUITY, September 1932. The interlaced ornament of Armenia is discussed in detail by Baltrusaitis, *L'Art médiaeval en Géorgie et en Arménie.* (Paris, 1930).

churches are now deserted and even the cathedral is destitute of its patriarch and is served by only a few monks, who inhabit a corner of the buildings of the old monastery and theological college (pl. IV). An important museum of christian archaeology which was attached to this institution has been moved to Erivan ; the library survives, though it has apparently been deprived of its greatest treasures, the famous Etchmiadzin Gospels, dated 986 and the ivory cover of the sixth century.[3]

The monastery of Etchmiadzin was founded in the fourth century. The present buildings are fairly recent, but it appears that they follow a seventh century plan fairly closely, enclosing a quadrangle like an Oxford or Cambridge college, with the cathedral in the middle (pl. V). It has been suggested that this building is to be assigned in part to the fourth century, but it would seem that the walls cannot really be older than the seventh, when the whole edifice was restored. The dome is probably of the thirteenth century, while the elaborate porch is a seventeenth century addition which follows closely in the traditional style of Armenia (pl. VI).

The other churches of Etchmiadzin, if less famous, were little less imposing. They still stand, but their future lies in the balance. One of them, St. Rhipsima (pl. VII), which is later than the seventh century, if not actually used, is at least kept in repair. Rivoira sees here Byzantine influence; for Strzygowski it is an Eastern building of the type from which Byzantium learnt so much. D. TALBOT RICE.

## A NEW ROMAN SITE IN CUMBERLAND

In ANTIQUITY for December 1930, pp. 472–77, Mr R. G. Collingwood described a newly discovered Roman signal-station on Barrock Fell, Cumberland, which had been explored by Mr R. E. Porter, Dr W. Goodchild and himself. This station had not been suspected until it was recognized and photographed from the air in July 1930, by Wing-Commander Insall, V.C. On the same day he also photographed several other sites in the neighbourhood and the photographs were sent by the Editor of ANTIQUITY to Mr Porter, who, with the help of Dr Goodchild, was able to identify the sites on the ground. One of the photographs, which showed a quadrilateral enclosure with double outline in a field of oats, was located on the northwest slope of Thiefside

[3] I tried to ascertain their whereabouts when at Etchmiadzin in September 1930, but they seemed to have been mysteriously mislaid between Moscow and Armenia.

Hill on Petteril Green Farm, roughly midway between Carlisle and Penrith.

On visiting the site Mr Porter and Dr Goodchild found the growth of corn more lush in the area indicated by the dark lines on the photograph and in parts it was laid, but nothing definite could be made out by inspection. Permission was obtained to explore the site and in August 1931 two trenches were cut by Mr Porter and Dr Goodchild. One, about 50 feet long and varying in depth to 5 feet was cut in the northeast corner of the field, but no trace of the enclosure was discovered. About 20 feet east of the outer line of the enclosure a small piece of dark coarse pottery, of a type difficult to date, was found 18 inches below the surface. In the second trench, which was cut opposite the opening in the north boundary of the enclosure, a considerable amount of charcoal was found a foot below the surface. Although nothing conclusive was found on this occasion, owing to the short time available for exploration, it was felt that the site was sufficiently important to demand fuller investigation, and arrangements were made to renew the exploration in July 1932, after the hay crop had been gathered.

The field slopes gently towards the west with slight undulations, but no indication of the underlying camp could be observed on the surface. We were informed by the tenant, Mr Savage, who has farmed the land for eight years, that occasionally during ploughing a large stone has been encountered but he had not seen any evidence of walls.

It was decided that the most promising portion of the site was the northeast angle, which showed up so clearly in the photograph. A trench was cut at right angles to the north fence, commencing about 20 feet away from it. Twenty-nine feet from the fence stones were encountered 18 inches below the surface, which, on being cleared, were found to belong to a wall 18 inches high, built of three courses of boulders, the lower course of which had been laid in a shallow trench and embedded in clay. (Plate II). This wall, which was found to run towards the east, was followed to the end of the curve and the direction of the north and east boundaries of the enclosure was proved by trenches cut at a short distance away from the angle. The trench was then continued in a southwesterly direction, and at a distance of 28 feet from the outer wall a second wall consisting of a single course of smaller stones was found running parallel to the outer wall. This inner wall was also proved on the north and east sides of the enclosures, where it was also 28 feet away from the outer wall.

In the air-photograph (plate I) the outer boundary of the enclosure

is seen to pass under the east fence of the field. A trench was cut at this point and the outer wall was found at the point where it passes under the fence, while the inner wall was 26 feet away from it. By siting from trees which could be recognized in the field fences, the approximate situation of the southwest and northwest angles were located on the ground and their position determined by trenching, but no attempt to prove the inner wall was made at these points. These excavations were sufficient to determine the area of the camp and attention was then turned to the gap in the north boundary. The wall on the east side of the opening was located, but lying close behind it was a modern stone-built field drain. The wall at this point consisted of a single layer of stones, two feet wide, bedded in clay, and it was thought that it had been robbed during the construction of the field drain. The wall terminated by turning south towards the enclosure. About 5 feet from the end of the wall was a paved causeway, 19 feet wide, formed of well laid stones bedded in clay. To the west of the causeway the termination of the wall was found to consist of a broad foundation of stone, but lying to the south of the line of the eastern portion. From this arrangement it was thought that the entrance to the camp had been guarded by an internal clavicula running from the western side of the opening, but no trace of such could be found.

The site is apparently a semi-permanent camp which was protected by a clay rampart 28 feet wide at the base with retaining toe walls externally and internally. The outer toe wall was 18 to 24 inches broad and at the northeast corner 18 inches high, while the inner wall was much lighter and less well constructed. At the northeast and southeast angles, and at the abutment of the wall on the gateway, the foundation appears to have been strengthened by a roughly pitched layer of stone between the toe walls on which the clay rampart had been built. Whether this foundation also existed at other points between the toe walls was not proved. The soil of the field is a stiff red clay in which are erratic boulders of Criffel granite, sandstone, and metamorphic slate, of which the toe walls were constructed. In shape the camp is an irregular quadrilateral, the outside measurement of the sides varying from 300 to 354 feet. The east, south, and west sides are straight, but the north side shows a marked curve and the portions on either side of the gate are not in alignment. The area of the enclosure within the rampart is approximately $1\frac{3}{4}$ acres.

The only finds made during the excavations were a small piece of dark coarse pottery and a fragment of tile about two inches square

and one and a half inches thick, which are insufficient to assist in assigning a date to the camp, but from its construction it probably belongs to the latter part of the first century.

Although the trench outside the northeast angle was continued up to the fence no trace of a ditch was discovered. This trench was only cut down to the level of the footing on the outer wall but throughout its length the soil appeared to be hard and undisturbed. Clay of this type, after a long interval, would become very compact, and indications of a ditch might be easily overlooked.

On the air-photograph there are indications of a road 350 yards east of the camp running in a northwesterly direction from the summit of Thiefside Hill towards the bridge over Blackrack Beck. On the south side of the hill a sled-track from the quarry on the summit continues the line of this road, its direction being straight towards the Roman station of Voreda, two and a half miles to the south. Towards the northwest the road, if continued in a straight line, would strike Barrock Fell—three miles away—approximately where the signal-station was located two years ago. This road, which, owing to the limited time at our disposal, was not trenched, is probably an early road, the present main road from Penrith to Carlisle, being constructed later on the east side of Thiefside Hill to avoid the steep ascent. It is highly probable that there was a signal-station on the summit of Thiefside Hill connecting the Barrack Fell station with Voreda but, if such a station did exist, all trace of it has been destroyed by extensive quarrying on the summit of the hill.

We are greatly indebted to Mr Foster Savage of Petteril Green farm for permission to explore the site and for an invitation to continue the exploration in the autumn of 1934 when the field will be in stubble after corn, and also to the trustees of the late Miss Parker of Penrith. The expenses in connexion with the excavations were defrayed by a grant from the Research Fund of the Cumberland and Westmorland Archaeological and Antiquarian Society. J. E. Spence.

## A THIRTEENTH CENTURY CHURCH AT NICOSIA, CYPRUS

During recent alterations, which entailed the lowering of the sixteenth century ramparts north of the Famagusta Gate, the walls and foundations of a thirteenth century Latin church have been discovered. They have, since, been cleared by the Municipality under the supervision of the Cyprus Museum, and the site fenced in.

The small church is of the early Basilican type with apse at the east end. The apse was cut away to make room for the stone face and the whole church razed to the ground and levelled off, to make a platform for the rampart which was raised some 20 feet above the church. The roof was vaulted, for all the ribstones were found to have fallen in their relative positions and the two bosses, one with the cross of Jerusalem and the other the ' Agnus Dei ' of the Templars, were intact.

The north wall still stands to 5 feet 6 inches and has been plastered with white gypsum at a period subsequent to its erection. A painted panel is of later date and shows the lower part of a draped figure on a black background ; the border is in red. To the left is one of the pillars from which the ribs of the vault sprang. The south wall fell outwards, and only two courses remain standing ; among the débris most of the tracery of a ' Flamboyant ' Gothic window was recovered together with a great deal of carved stone.

The west end of the church (plate x) is badly destroyed, but part of the carved jambs of the door may still be seen and the flight of steep steps which lead up to it. An octagonal tower supports the southwest corner and may have been a belfry. The steps end abruptly before reaching the tower and a small chamber of later construction juts out from them, round the foot of the tower. On its west wall two steps remain which seem to suggest that it is the basis of a stairway. On the north side another chapel adjoins the church : it extends beyond the west front and is larger than the church. The main doorway leads on to a flight of semicircular steps which join on to those of the west door ; this chapel is rectangular and is also connected to the main church by a small door. At the east end traces remain of an altar tomb : the surrounding wall with opening at the back stands a few inches in height, and the bottom is lined with cement. Two steps lead up to it.

Half way down the church projecting from the north and south walls are two tomb-like structures—the one to the south is still covered with a large slab of local marble, but has no inscription. Of the other, only part of the solid masonry base remains. Between them, two shallow steps lead up to the altar.

The floor of the building, which was some 3 feet 6 inches above ground level, is of marmora in fairly good condition. It was covered with masses of building rubbish, tiles, stones—a number still having the painted plaster face with figures of saints in brilliant colours, and much gold ; also much plaster tracery with the shaped glass roundels of windows fitted to them. Above this, a large quantity of earth had

been shot to level off the site. It contained much medieval glazed ware and a few coins belonging to the fourteenth century.

The little church appears to have stood on a natural eminence and must have been one of the many which were destroyed at the time the Venetians began the ramparts (designed by Savorgnano) in 1567, and probably belongs to the period when many Europeans flocked to the island and much of the best building was done. It is hoped that part of the building may be roofed in, and the material found on the site exhibited there.

JOAN DU PLAT TAYLOR, Asst. Curator, Cyprus Museum.

## YARNBURY CASTLE

Mrs M. E. CUNNINGTON has sent the following note on the date of the inner work at Yarnbury Castle, Wilts.:—

Yarnbury Castle on Salisbury Plain is a fine plateau camp about 28½ acres in extent, with triple entrenchments and an elaborately defended entrance on the eastern side. There are also gaps through the ramparts on the north and west, either of which may possibly be original, in spite of the fact that the ditches seem continuous at these points. It is unlikely that such a large enclosure would have had only one entrance.

One of the most interesting features connected with the site is an inner entrenchment, roughly concentric with the outer, consisting of a much defaced single bank and ditch. It was thought that this inner work represents an old earthwork of the 'causewayed' or 'interrupted' ditch type, like that on Windmill Hill and Knap Hill, in Wiltshire, and the Trundle and Whitehawk camp in Sussex. On the ground there were high places in the filled-up ditch that somewhat resembled causeways, and these appearances were well shown up in photographs taken from the air.

Excavations, extending over three weeks, were undertaken in June last, solely with the purpose of testing the character and date of the inner work, and with the expectation, as well as with the hope, of proving it to be of the causewayed type.

Though it is plainly seen on the air-photograph[1] it is difficult to

[1] One of these, with a general description of the site, was published in Crawford and Keiller's *Wessex from the Air*, 1928, pp. 68–71. It was reproduced in ANTIQUITY, March 1930, with an article on Neolithic camps. In both these publications attention was drawn to the inner ring with its apparent causeways, which are said to have stood the test of the boser.

trace the inner work on the ground, except on the west and southwest sides, and here the only three visible ' causeways ' were tested. In two of these the ditch was continuous, and the appearance of a causeway being due to unequal filling up of the ditch; the third proved to be indeed solid, and a normal entrance way, 15 feet wide, with flanking ends to the ditch, and post-holes within—in all probability those of the gates.

Suspicions as to the date of the earthwork were aroused almost as soon as digging began, on account of the scarcity of flint flakes and of worked flints of any kind. Apart from the pottery found in it, as soon as the first section of the ditch was cleared out there could no longer be any question of its being Neolithic. The ditch was well and regularly cut and, as originally made, from 11 feet to 12 feet deep, and nowhere more than a foot wide at the bottom ; so this inner work, though only a single bank and ditch, must have been of considerable strength.

Large numbers of sherds of Romano-British pottery were found in the superficial layers, and Iron Age pottery beneath to the actual bottom of the ditch.

The earliest type of pottery is that of a red haematite coated cordoned bowl, similar in every respect to some from the Hallstatt-La Tène village site at All Cannings Cross. Haematite coated bowls with horizontal furrowing such as were most common at All Cannings are not represented, and none of the coarser wares show finger-tip ornament.[2]

Several other Wiltshire sites have yielded sherds of haematite coated cordoned bowls, and not of the furrowed, and there is reason to believe that as a type the cordoned bowl is later than the furrowed. The sherds of cordoned bowls are ornamented with chevron pattern and other lines, and as on all other Wiltshire sites known to the writer the ornament is scratched through the colouring AFTER firing.

The absence of finger-tip pottery, and the presence of haematite coated bowls, seems to justify the conclusion that the inner earthwork is rather later in date than the All Cannings Cross village, or at earliest contemporary with the end of the occupation there, and may be assigned therefore to the early La Tène period.

The date of the great outer entrenchments at Yarnbury is not

---

[2] M. E. Cunnington, *All Cannings Cross Farm*, plate 28, figs. 1–5. (G. Simpson, Devizes, 1923).

known ; it is probable, however, that they are late La Tène, but the possibility of their being of the post-Roman dark ages should not altogether be ignored, though the fact that nothing recognizably later than the Roman period was found does not lend probability to the later date.

Sections were made in what remains of the bank, both to the north and south of the causeway, and in each was found a row of post-holes which it seems could only have served to hold the posts of a timber

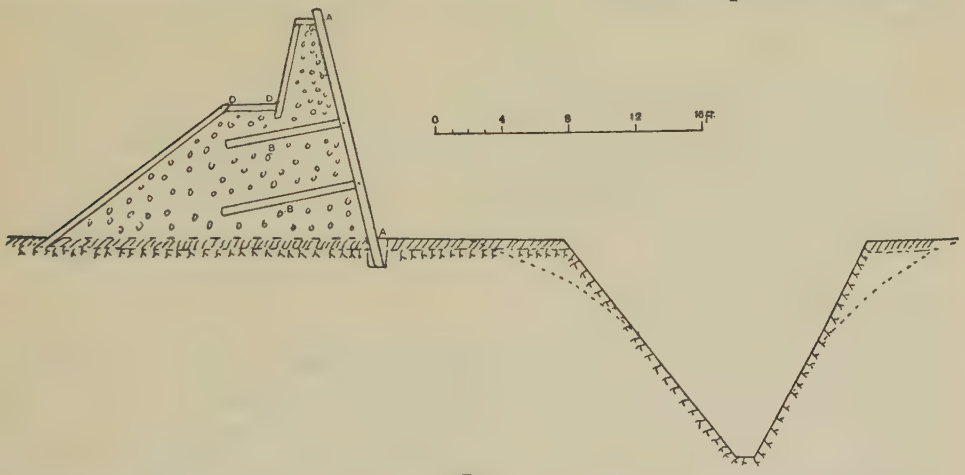



FIG. 1

Section of ditch, with dotted line indicating the profile as altered by weathering, and a conjectural section of the wall as supported by timber revetment posts (A–A) standing in the holes found under the bank; these posts could have been tied back by horizontal poles embedded in the chalk core (B–B). Probably the whole outer face of the wall was masked by upright timbers, but only every two or three were strengthened by the butts being sunk into holes below the turf level. Poles laid horizontally behind the uprights would have afforded a possible foothold for climbing, and for this reason were no doubt regarded as undesirable. It was necessary to place the wall some way back from the ditch to allow for the inevitable weathering of the edge of the ditch. It would have been quite feasible to construct a rampart walk on the inner side of this chalk and timber wall (D–D).

We are indebted to Lieut.-Colonel R. H. Cunnington, R.E. (retired) for details of the conjectural reconstruction of the chalk and timber wall.

revetment to support and mask the chalk core of the walls. (See plate XI and fig. 1).

As a result of the excavations it seems that sometime early in the Iron Age a single entrenched earthwork of considerable strength was made, with an entrance to the west, and probably another to the east. Sometime later, but probably also in the pre-Roman Iron Age, the present existing triple entrenchments were made, perhaps because a larger enclosed area was needed or because the older work was of an obsolete type, and possibly out of repair. The filling-in of the ditch was of an unusual nature, but it seems for the most part to have been due to natural causes, and not to intentional filling up, so it is quite

likely that the defences were in bad repair before the outer works were made. The inner bank, however, was certainly partly demolished intentionally, by being thrown inwards, thus levelling the inner area to some extent, and making the remnant of the bank appear less than it actually is. Whether the site was occupied continuously from the time when the first entrenchment was made, right through into the Roman period, it is hardly possible at present to determine, but that it continued to be inhabited after the inner ditch was filled up (almost to its present level) there is no doubt, because several pits, as well as a grave, were found dug partly in the silt and partly in the solid bank. One large pit was particularly interesting as it was dug wholly in the ditch near the centre, its outline being clearly marked off from the silt, showing that the pit was dug when the ditch was, within a very few inches, as full of silt as it is today. The pit was of either late pre-Roman or early Romano-British date. A full account of the excavations will be published in the *Wiltshire Archaeological Magazine*.

## THE ROMSEY HORN

The horn illustrated on plate XII was found in November 1931 during the construction of filter-beds for the Romsey drainage system, at an alleged depth of between 16 and 17 feet, at the foot of Green Hill. The excavation was filled in immediately afterwards, before any examination of the soil could be made. Another is said to have been found at the same time, but all efforts to trace it have been unsuccessful. It is said to have been similarly marked. The discovery is due to the Rev. S. T. Percival, Rector of Farleigh Chamberlayne, who rescued from oblivion and loss what is evidently a most important object. The present note is merely a preliminary one ; the object itself has not yet been examined by experts ; but there seems to be general agreement amongst those who have seen the photograph that it belongs to a pre-neolithic date, and perhaps even to the late palaeolithic period. The Abbé Breuil informed the writer of this note that similar types are found in the Magdalenian period.

## SCULPTURED ROCK AT TRAPRAIN LAW

The name of Traprain Law is familiar to all archaeologists, for it is here that the famous hoard of silver objects was found 13 years ago.* The ' acropolis ', as we might call it, was inhabited at least as

* May 1919. See *Procs. Soc. of Antiq. of Scotland*, 1919–20, LIV, 102 ff, and succeeding volumes ; A. O. Curle, *The Treasure of Traprain*, 1923.

early as the Bronze Age and as late as the fifth century A.D. The most recent discovery suggests a yet earlier period, for the nearest analogies are found in the prehistoric flint-mines of Sussex.† It is, however, sad to learn that it occurred during operations being made 'preparatory to quarrying'. Must all our finest historical and scenic landmarks be sacrificed to the greed of private enterprise? The photographs (plates XIII, XIV) reproduced are different views of a sculptured rock on the top of Traprain Law.

Mr A. J. H. Edwards, of the National Museum of Scotland, observes:—'Nearly the whole of the surface, about 36 square feet, is covered with markings incised and pecked in the softer skin of the whinstone rock. In addition to the well-known cup and ring markings of the Bronze Age there are a number of others of most unusual character. These are in the form of grids and parallel lines intersected by other lines. A number are distinctly tectiform and others again may be highly conventionalized human figures.

'At one side of the rock there is a well-defined carving of a fourteenth century calvary cross (not shown in the illustration). The traditional association of the rock with pagan ritual, or perhaps the accidental uncovering of one of the higher portions with its strange markings, has led to someone saining it with the christian emblem so as to avert evil.

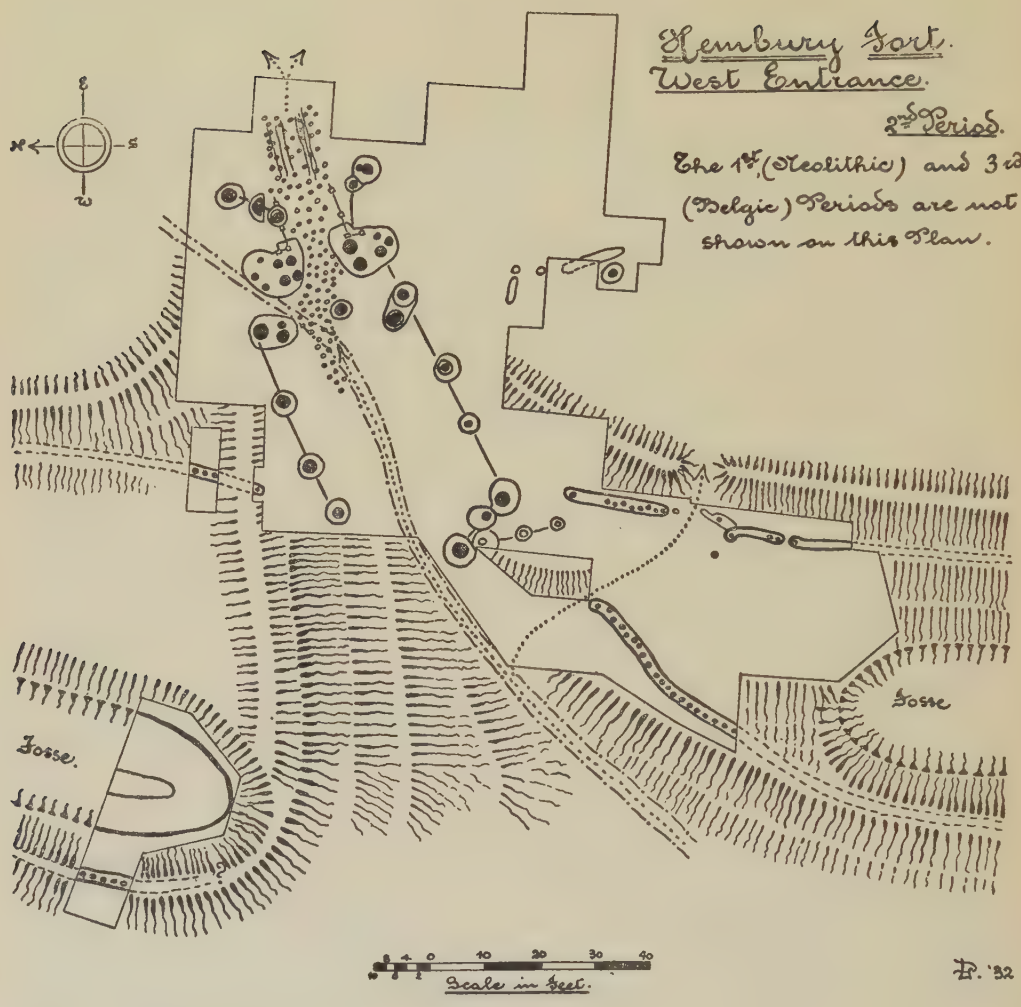
'A cast of the entire surface of the rock was made under the supervision of H.M. Office of Works and presented to the National Museum of Antiquities of Scotland, where it is now on view. A complete description will be published in next year's issue of the Proceedings of the Society of Antiquaries of Scotland'.

## THE PALISADE AT HEMBURY FORT.

Miss DOROTHY M. LIDDELL writes:—The palisade uncovered during the Devon Archaeological Exploration Society's recent excavations at Hembury Fort has a two-fold interest on account of the technique of its construction, which is totally different from that of the examples excavated in chalk sites, and its position in the general scheme of defence with regard to the main gateway.

Four sections were cleared in which the original packing-stones were found still so securely wedged in place in the bedding-trench, that it was possible not only to see the exact size and position of the posts,

† See *Sussex Archaeological Collections*, 1924, LXV, 69–111 and 1926, LXVII, 103–38.


Hembury Fort.
West Entrance.
2nd Period.
The 1st (Neolithic) and 3rd (Belgic) Periods are not shown on this Plan.
E
N
S
W
Fosse.
Fosse
0 10 20 30 40
Scale in feet.
E. '32
Excavated areas within continuous lines
O = Postholes
= Ditches
= Palisade Trench
= Cores of decomposed wood posts.
= Cobbled roadway with wheel-tracks.
Modern Roadway.
Ancient Roadways.
Presumed Route of Palisade.

but to reconstruct a portion of the stockade by slipping new stakes into the original holes, thus giving some impression of its appearance when standing. (Plate XV). The sockets held posts 7 to 8 inches in diameter placed 7 to 9 inches apart, sunk in a trench 2 feet below the surface and packed into place with flat slabs of local chert. In two places these holes were slightly staggered, suggesting that the uprights had been laced with withies or brushwood.

The first stockade is placed well outside the inner vallum but the second is in the centre of the outer bank, beneath its apex. There is evidence that the inner palisade completely encircled the camp—that the outer one did likewise is probable but has yet to be proved.

At the main entrance to the Fort the recurved vallum is flanked by a double row of huge posts (evidently part of a revetment) leading up to a complicated gateway, through which, on the original cobbled surface of the road, wheel tracks are clearly visible.

The palisade comes up to the back of the recurved bank, stopping 10 feet short of the post holes on either side.

Just south of the main gate a hollowed pathway branches from the road and runs up to a gap 11 feet wide in the palisade—a postern, or sally-port. This is sheltered by the palisade from the second vallum which, curving round the end of the great ditch, forms a protecting screen to this secondary entrance. Twenty definite post-sockets were exposed in this section.

That a large part of this Iron Age work is built upon the silted up Neolithic ditch belongs to another chapter in the story of Hembury Fort.

## GAZA

Sir FLINDERS PETRIE writes:—'The discovery of the five palaces of Gaza has given a firm connexion with Egyptian history from the XVIIIth to the VIIth dynasty (1500–3100 B.C.), and produced a set of Hyksos queen's jewellery placed in a cenotaph. The large quantity of painted pottery imported from northern countries is thus dated, and gives a view of the high civilizations there over the palace period. The British School of Egyptian Archaeology (University College, London) will endeavour to find the temples this winter if the public will pay the workmen. Fifty pounds a week is needed to keep up the work. Even Irish archaeology has received a dating at 1500 B.C. by the gold work traded to Gaza. For historic archaeology there is no site with such a wide promise'.

# Recent Events

*The Editor is not always able to verify information taken from the daily press and other sources and cannot therefore assume responsibility for it.*

We have been informed that the amended Ancient Monuments Act has just passed the Legislative Assembly of India and will be law in a short time. It enables English and foreign Universities and Societies to excavate in India. The terms on which they will be allowed to work will be much the same as those obtaining in Palestine and Iraq.

One of the most interesting exhibits at the recent Congress in London was that of flint implements from Kharga oasis, Egypt, by G. Caton-Thompson and E. W. Gardner. It is seldom that excavators can unearth such magnificent specimens of Acheulean and other older palaeolithic tools. Those exhibited were masterpieces of prehistoric skill. But of course the main value of the work done lies in the fact that it represents a definite, and very big, advance in our knowledge of the palaeolithic period in North Africa. The finds were not isolated but could be associated with definite geological horizons.

Mr Neville Jones has presented his magnificent collection of stone implements to the Rhodesian Museum, Bulawayo. Mr Jones is the author of a book *The Stone Age in Rhodesia** which, he says with refreshing but perhaps excessive candour, ' is now hopelessly out of date, and I do not advise anybody to read it '. That is the right scientific spirit, anyway ! In a letter to us he states that he is ' anxious to build up a type collection representing the European culture-sequence ; and I should like it to be known that I am open to negotiate exchanges '. (We have paraphrased his words). Will European museum curators please note ? Here is a splendid opportunity of obtaining typical South African specimens for their own type-collections. Objects should be sent to Mr Jones at the Museum, Bulawayo, Rhodesia.

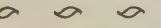
* Reviewed in ANTIQUITY, 1927, I, 114.

Professor A. J. H. Goodwin has been excavating a cave at Mossel Bay in which he hopes to obtain evidence of the age of the coastal culture and in particular its relationship with the 60-foot raised beach. The cave was dug into some 30 years ago by Messrs J. Parrie and Gordon Leith, when a human skeleton and other bones were found. (*The Friend*, Bloemfontein, 14 July 1932).

California has its giants as well as Dorset; but they are carved not in turf but in pebbles. They were discovered from the air and photographed (*Illustrated London News*, 10 September, pp. 378–80). Each of the two giants represented has a four-footed companion. They do not look very ancient. The published air-photographs show plainly a series of dis-tributaries covering the gravel plain and gradually advancing across it from the surrounding higher semi-desert; they seem to be of natural origin.

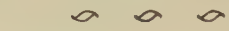
Yet other even more remarkable discoveries have been made, and photographed, by the Shippee-Johnson Peruvian Expedition, working in association with the American Geographical Society. They reveal a Great Wall, 30 miles long, a system of forts associated with it, and some finely preserved amphitheatres on the Maras Pampas, about 15 miles northwest of Cuzco. All these photographs are obliques. We hope that, in the interests of science, verticals also were secured. Obliques are not without value, but cannot compare with verticals for serious study.

One of the strangest things revealed by the camera is a band of pock-mark indentations running along a ridge, and also on its steep side. Professor Sir Flinders Petrie (who kindly drew attention to them) suggests that they may represent 'mining along a line of fault for ore; on the dark plateau on the right are many square chambers of the miners' settlement'. Perhaps one of our Peruvian readers will visit the site and tell us what is to be seen on the ground. We shall be pleased to send him our cutting from the *Illustrated London News*.

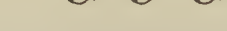


Mr Herbert W. Krieger, a curator of ethnology in the Smithsonian Institution, is proceeding to the Bahamas, to try and identify the 'naked, painted Indians, with fine high foreheads' who were the

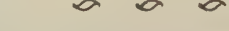
first inhabitants of the New World encountered by Columbus. He will follow up this investigation by exploring the shell-heaps of Cuba, which have never yet been scientifically examined. (*Nature*, 12 March).



An account of the fossil man found in 1927 at Asselar, Cercle de Kidal, French Sudan, has been published by MM. Boule and Vallois in Num. 9 of the Inst. de Paléontologie humaine. The skull and face are well preserved, cephalic index 70.9, cranial capacity about 1520 c.c. It resembles the Hottentot and Bantu types, and it is suggested that it and Grimaldi man are derivatives, perhaps associated with the Capsian industry, of an earlier less specialized type which divided, one going north and becoming Cro-Magnon man, the other going south and becoming ancestral to the Bushmen and Hottentots. (*Nature*, 20 August).



During a recent visit to Armenia the Editor was given a photograph of rock-engravings near Lake Gokcha (Sevang). For this he is indebted to the Archaeological Committee of Armenia. Though good it is unsuitable for reproduction, as the figures are so small that they would be invisible on a half-tone plate. It was submitted to the Abbé Breuil who reports that it shows ' six or seven Ibexes with very big horns '. He does not regard the style as very old, or of palaeolithic age, but rather akin to paintings on eneolithic pottery from the lower levels at Susa and Tepé Moussian. The relative nearness of Armenia to this region gives some support to this comparison. The technique is one of pecking with a hard stone.



An attempt has been made to locate the settlement belonging to the cemetery at Baldock, Herts, (see *Arch. Journ.* 1931, p. 246). The first trenches revealed skeleton burials, and later ones remains of dwellings (evidenced by post-holes and cobble pavements). At least three periods were detected ; the second began apparently not before the second century ; the third yielded a fourth century coin but may have begun as early as the third century. Other dwellings were found further east. The work is being carried out by the Letchworth Museum Excavation Committee, under the direction of Mr E. S. Applebaum.

Mr Mansfield D. Forbes and Prof. V. Gordon Childe carried out a trial excavation in September at Old Keith, a ruined stone circle of the recumbent stone type near Alford in Aberdeenshire. Many potsherds of Early Iron Age type (not Romano-Caledonian) were discovered, some in such positions that they can hardly be posterior to the erection of the monument. Hence this type of circle is probably a good deal later than has been generally supposed.

A Committee for the Investigation of the Early History of the Fenland has recently been formed at Cambridge under the distinguished presidency of Dr Seward, Master of Downing. The region included in the terms of reference embraces the whole area of the Fenland past and present. The investigation is designed to cover the widest possible interpretation of history, including in its scope geological, botanical, zoological and climatological change in addition to the succession of human cultures in the area. The committee consists of working specialists strictly limited in number and carries no body of members. The co-operation of the Cambridge Antiquarian Society and the Prehistoric Society of East Anglia has been obtained, each supplying delegates to serve on the committee. The committee, realizing that in the past much valuable evidence has been lost through the absence of any central body for the co-ordination of these studies, will welcome any information on the subject ; furthermore they will be only too glad to visit the sites of chance discoveries on the information of those on the spot. Anyone wishing to communicate with the committee should do so through the secretary, Mr J. G. D. Clark, at Peterhouse, Cambridge, who will put them into communication with the appropriate member.

The Athens correspondent of *The Times* reports an interesting discovery made in clearing out a well in the American zone of the Agora excavations. Three sherds (*ostraka*) were found bearing the names of Aristeides, Themistocles, and Hipparchus, and appear to be undoubted relics of the ostracism of Aristeides ' the just '. (*The Times*, 29 August, p. 10).

An account of the excavations at Tipaza, a small village and seaport some 60 miles west of Algiers, is printed in *The Times* (1 September,

p. 9). The Service des Antiquités has begun work at the necropolis near the second–third century basilica and expects to find a large number of well-preserved tombs.

Finds of great importance have been made at Damgan, North Persia, where a joint Expedition of the University Museum of Pennsylvania and the American Institute for Persian Art and Archaeology is at work under the direction of Dr Erich Schmidt. Some fine examples of metalwork in copper, silver and gold, have been recovered from a building at Tepe Hissar. Dr Schmidt dates the lower levels of the workings as very close to the 4th millennium B.C. (*The Times*, 12 September, p. 11).

The Hebrew University in Jerusalem has decided to found a Chair of the Art and Archaeology of the Near East, which has been made possible through the generosity of Sir David Percival. Dr L. A. Mayer, of the Palestine Government Department of Antiquities, has been appointed as the first occupant. (*The Times*, 18 August, p. 9; 7 October, p. 11).

During the past summer a Harvard University Archaeological Expedition has been excavating a crannog or lake dwelling, of the Viking period, at Ballinderry, near Moate, co. Westmeath, Ireland, and an Early Bronze Age cairn at Knockast. The work has been directed by Dr H. O'Neill Hencken in association with Dr Adolf Mahr. A very interesting collection of articles has been recovered, including animal remains, stone querns, the coulter of a plough, wooden vessels and iron and bronze objects. The most important finds are a bronze hanging-lamp, suspended by animal heads and with elaborate patternwork on the bottom, and a wooden gaming-board, $9\frac{1}{2}$ inches square, which is considered to be the finest object of the Viking period ever found in Ireland. (*The Times*, 7 October, p. 9 and illustration).

A report on the results of the excavations at Verulamium during this summer is printed in *The Times*, 24 September, p. 8. The western gate of the city-wall, by which the road from the Forum left in the direction of Silchester, has been found, and also an interval tower of second-century build.

The excavations at Herculaneum which have been in progress for the past five years are being continued and Professor Maiuri, Superintendent of Italian Antiquities, describes in a special article contributed to *The Times*, 29 September, p. 11, the most recent discoveries, which are of particular interest in regard to the social life of the city.

Mr W. J. Maxton, Hayling Island Field Club points out that a statement in the review of *The Romans in Britain* on p. 372 of the September number of ANTIQUITY needs correction. Mr Richmond wrote that the Chichester inscription, stated in the book to be *from* Goodwood Park is *in* it, but Mr Maxton says that the 'Roman inscription now on the wall in North Street was *formerly* in Goodwood whither it had been taken after being dug up in Chichester quite close to its present position '.

The ' Grotto of the Sibyl ' at Cumae, which has been the object of considerable investigation by Professor Maiuri, of Rome, has now been proved to his satisfaction to be the actual cave in which the foundation of Rome was predicted to Aeneas. A corridor nearly 700 feet long leads to the chamber which he identifies as the one where the Sibyl lived, and he considers that the description given in Vergil supports this without doubt. Professor Maiuri has published his account of the discovery in the *Bulletin of Mediterranean Studies* with very full details of the corridor and the galleries opening from it. These are given at some length in *The Times*, 13 October, p. 13, and 15 October, p. 9.

Mr Miles C. Burkitt, joint compiler with Prof. V. Gordon Childe of the Chronological Table of Prehistory which was published with the June number of ANTIQUITY, and which has been received with a chorus of approval, asks us to state that the word ' Mindel ' at the top of column 29 is too high. Being of Tertiary Age the eoliths are all pre-Mindel. We may mention that copies of the reprint of the Table, with the introduction, can still be obtained (price *2s 6d*) from the Assistant-Editor, 24 Parkend Road, Gloucester.

# Some Recent Articles

*This list is not exhaustive but may be found convenient as a record of papers on subjects which are within the scope of* ANTIQUITY. *Books are occasionally included.*

A Handbook of the Prehistoric Archaeology of Britain ; issued in connexion with the First International Congress of Prehistoric and Protohistoric Sciences held in London, August 1–6, 1932 ; by various authors. *Oxford University Press*, 1932. pp. VIII, 75, illus. 3*s* 6*d*.

Archaeology in England and Wales, 1914–1931, by T. D. Kendrick and C. F. C. Hawkes. *Methuen*, 1932. 18*s*.

We cite these two publications here and now, although we shall deal with them again later, because they fill a long-felt need. The first does not pretend to be 'a manual of British prehistory' (though it seems a good substitute), and the second has time-limits imposed ; but anyone who wants a good text-book (if we must use the word) cannot do better than buy both.

The Personality of Britain : its influence on inhabitant and invader in prehistoric and early historic times, by Cyril Fox, Director of the National Museum of Wales, Cardiff (by whom it is published) : 1932. pp. 84. 2*s* 6*d*.

To the two preceding items this monograph must be added. It is equally indispensable, lavishly illustrated, and admirably conceived. We shall review it at length later.

La Revue de Liban: les grandioses Ruines de Baalbek. Numéro spécial. *Paris, Geuthner*, 1931. pp. 24. 6 *frs*.

A popular tourist's 'Souvenir' of these remarkable ruins. There are numerous photographs and the letter-text is mainly a collection of passages from famous French authors who have visited, and written of, the marvels of Baalbek. M. René Dussaud provides a short and useful introduction W.J.P.-A.

Sulla posizione evolutiva di alcuni crani preistorici dell' Inghilterra : L. W. G. Malcolm. *Archivio per l'antropologia e la etnologia*, 1930–31, vol. LX–LXI, with separate pagination.

The Royal Anthropological Institute's Prehistoric Research Expedition to Kharga Oasis, Egypt : the second season's discoveries [1931–2]. *Man*, 1932, no. 158.

Prehistory in Palestine: a Bibliography, by M. Stekelis. *Jerusalem*, 1932. pp. 41. No price stated.

Reprinted from ' Kirjath Sepher ', vols. 8 and 9. The compiler of this very useful bibliography explains in his preface (which is also printed in Hebrew at ' our ' end of the book) that it had been intended in the first place as preparatory work for an archaeological map of the prehistoric period in Palestine. Lack of the necessary means has unfortunately postponed its completion and the bibliographical material is therefore now published ' in its own right '. The compilation bears every sign of much painstaking and devoted work, and M. Stekelis' fellow-students will have cause to thank him for this lightening of their own labours. W.J.P.-A.

The Late Palaeolithic inhabitants of Palestine, by Sir Arthur Keith: substance of a paper read at the International Congress, London, August 1932. *Nature*, 20 August 1932.

Die Ausgrabungen der Notgemeinschaft der Deutschen Wissenschaft in Uruk (Warka) 1931–2: A. Nöldeke. [Bibliographical information obscure: separate pagination].

This valuable and well-illustrated report contains a good plan of the ziggurat and its surrounding temples.

Journal of the Manchester Egyptian and Oriental Society, no. XVII, 1932. *Manchester University Press*. pp. 68. *7s 6d.*

The present volume is markedly ' monarchical ' in character. Of the four special articles, three deal with ' Kingship ', human and divine. Mr G. D. Hornblower writes on ' Temples and Kings in Ancient Egypt ', Prof. M. A. Canney on the ' Magic of Kings ', and Rabbi A. E. Silverstone on ' God as King '. No deliberate connexion is apparent between these, so that the coincidence is presumably accidental. There does, however, seem to be a distinct tendency (it is very evident in Prof. Canney's paper) to trace every ancient tradition, even to the story of the Walls of Jericho, to some cult ritual in which the king took the leading part. Prof. Canney deprecates our taking the Old Testament too seriously, and advances his own explanation of this ' myth ' in the face of Prof. Garstang's very plain evidence of an earthquake! But perhaps Prof. Canney is not being 'too serious' about himself!

A murmur of protest ought to be raised against the price of this Journal. Surely it compares very unfavourably with that of other archaeological publications, for example ANTIQUITY. W.J.P.-A.

The Age of Pithecanthropus, by L. J. C. van Es. *Martinus Nijhoff, The Hague*, 1931. pp. xii and 142, with illus. and maps. *8 gld.*

A geological study. The author concludes that Pithecanthropus is of Early Pleistocene age.

Early Pottery on the Yorkshire Wolds [by T. Sheppard]. *Trans. East Riding Antiq. Soc.*, 1932, XXVII, 167–72, 6 figs.

These notes draw attention to some of the neolithic pottery of the Windmill Hill class in the Mortimer Collection, illustrated by excellent new drawings of the famous hanging Grimston bowls and of a hitherto unpublished little vessel from Esh's barrow near Cowlam. Mortimer's rather unsatisfactory sketches of the Towthorpe bowls are also reproduced, and welcome news is given of the identification in the collection of neolithic sherds from five new sites. It is to be hoped that these will soon be fully published. The last figure is given no provenance, but is actually another recently restored bowl from the Grimston barrow. There is no scale to any of the illustrations (they appear to be about $\frac{1}{3}$), but from them it can be seen that no. 248d is not 'of the same measurements' as 248c as stated in the text. S.P.

False and imitation Roman coins : some notes on moulds found, and coins manufactured elsewhere than in the imperial mints, by A. E. Robinson. *Journal of the Antiquarian Association of the British Isles*, Dec. 1931, II, 97–112.

The Towednack gold hoard, by Christopher Hawkes. *Man*, 1932, no. 222.

The Bed-canopy of the Mother of Cheops, by G. A. Reisner. *Bulletin of the Museum of Fine Arts, Boston*, August 1932, XXX, no. 180, 56–60.

A marvel of reconstruction, replete with technical details relating to early skill in carpentering.

Bulletin of the American Schools of Oriental Research, April 1932, no. 46 : issued quarterly to all contributors and subscribers of one dollar and upwards. Application for copies to Prof. Mary I. Hussey, Mount Holyoke College, South Hadley, Mass. European agent, J. C. Hinrichs'sche Buchhandlung, Leipzig C.1.

We have given full bibliographical details of this Bulletin, edited by Professor Albright, because it is indispensable to all who wish to keep *au fait* with exploration in the Middle East. The present number contains reports from Prof. Speiser on his excavations at Tell Billah and Tepe Gawra and an article by the Editor on 'New Light on Early Canaanite language and literature'. The last is concerned with the discoveries at Ras Shamra (see ANTIQUITY, 1930, IV, 460–6).

The Museum Journal, volume 23, number 1. *University Museum, Philadelphia*. $1.

In this number of the Philadelphia Museum Journal Mr J. D. Beazley gives an account of a battle-loutrophoros, which he dates at about 440 B.C. He describes the vase as the best preserved of the battle-loutrophoroi, most of the others being extant in fragments only. There are articles by Mr E. H. Dohan on vases from

the Henry C. Lea collection, ' A Late Minoan Pyxis ', ' A Lydian Imitation of a Laconian Vase ', and vases from the Hegeman collection. Mr V. Muller writes on a portrait of the Late Roman Empire. The number is very fully illustrated with photographs and drawings. G.F.F.

Hellenistic Queens : a study of woman-power in Macedonia, Seleucid Syria, and Ptolemaic Egypt, by Grace Harriet Macurdy. *Oxford University Press*, 1932. pp. xvi, 249, with 12 plates. 18*s*.

In this volume, which is number 14 in the Johns Hopkins University Studies in Archaeology, Miss Macurdy investigates the political power possessed by women in the three chief Hellenistic dynasties, and supports the view that it was in Egypt that the ' emancipation of the queens ' took place. The scope of the book is limited to matters which involve the lives and characters of the queens and their political position. The paucity of material in the case of some of these royal personages and the method of chronological treatment of the queens of the several dynasties inevitably produces in places a certain disconnectedness in the narrative. The facts however are assembled with scholarly care, and if the writer protests against the tendency of the male historians to judge the conduct of the women rulers in such matters as dynastic murder by a higher standard than that by which they assess the kings, she provides the material for an independent judgment. The book is attractively illustrated with a number of portrait-heads. G.F.F.

Atti e memorie della Societa Magna Grecia : 1929 and 1930. pp. 216 and 205. 160 *lire* (1929) ; 125 *lire* (1930).

These excellent reports by the recently founded Society for the investigation of the Greek cities of Magna Graecia and Sicily provide material for a reconstruction of the much-neglected Greek archaeology of the West. It has long been a reproach to Italian archaeology that so little had been done. That reproach can no longer be levelled. In these two volumes a full account is given of Signor Marconi's very fruitful excavations on the site of Himera in Sicily. His discovery of the extensive remains of a fine archaic temple decorated with a superb series of lion sima-spouts and some important smaller finds show that Himera still has much to be excavated. The other researches of the Society have revealed the walls of Leontini and have gathered some scraps of evidence which may help to identify the hitherto unfixed sites of Sybaris and Laos. But both these cities still lie hidden beneath deep accumulations and their identity and extent are still uncertain. S.C.

# Reviews

REPORT ON THE EXCAVATION OF THE PREHISTORIC, ROMAN, AND POST-ROMAN SITE IN LYDNEY PARK, GLOUCESTERSHIRE. *By* R. E. M. WHEELER, D.LIT., F.S.A., *and* T. V. WHEELER, F.S.A. *pp.* VIII, 137, *with* 28 *text-figures and* 52 *plates.* (Reports of the Research Committee of the Society of Antiquaries of London, no. IX). *Oxford : printed at the University Press.* 7*s* 6*d.*

The series of Reports issued by the Research Committee of the Society of Antiquaries presents an almost ideal format for publishing major excavations in this country, and it is matter for congratulation to all concerned that it has been enabled to include those of 1928–9 in Lydney Park. The Romano–British precinct of the god Nodens, with its temple and other buildings, and above all its remarkable mosaics, has of course been known since Charles Bathurst's excavations of 1805, illustrated first in Lysons' stately plates and then in the careful recension published by Bathurst (the excavator's son) and King in 1879. But there can be no doubt of Lord Bledisloe's sound judgment in deciding to effect the renewal of his great-grandfather's work, justified as it has been by the modern revolution in the technique of archaeology, and none likewise of the wisdom of its committal to the auspices of the Society, and to the genius of the spade, the camera, and the pen wielded by Dr and Mrs Wheeler. A goodly share of the same genius has already been displayed by Mr D. A. Casey in his work on the twelfth century castle near by (*Antiquaries Journal*, XI, 240ff.), and now the publication of the main site fulfils all our expectations.

First of all, we have the earthworks of a prehistoric 'promontory fort', defending a settlement of an Early Iron Age culture similar, as might be expected, to that of Somerset across the Severn Sea. The rampart across the neck of the promontory is astutely divined to be the earliest, but the outstanding feature of the earthworks is their reconditioning in post-Roman times, recorded here in anticipation of a later chapter. Little could be gleaned of prehistoric dwellings, but a date in the first centuries B.C. and A.D. is indicated by the pottery and other material : there is a remarkable iron bowl with ox-head feet, and Mr Dunning contributes a useful note, with distribution-map, on La Tène II brooches, their rarity in Britain, and the relative lateness of the Lydney examples.

The coming of Roman rule effected no violent upheaval : the same sequestered barbarian occupation lasted on into the fourth century without much sign of any very profound Romanization. Studies of the scanty coins, pottery, and brooches make this clear. Dr Wheeler has particularly useful notes on penannular brooches, and on the imported 'Langton Down' brooch-type of the first century : his remarks are confirmed by the incidence at Colchester of this Gaulish form in normally native associations, in contrast to the German brooches that arrived there with the Roman army. As late as the end of the third century, two huts, built on a levelled portion of the old rampart, were still un-Romanized and primitive. But one of them did the excavators more service than emphasizing this point. Its floor was found to seal the adit of an iron-mine —the first Roman working of its kind to be attested in Britain, and evidently not the only

one on the site, which indeed is in part covered with such filled-in shafts. This one, being evidently of third century date, seems to belong to a later Roman expansion of an industry doubtless coeval with the prehistoric occupation.

The first five centuries of the site's history are thus instructive indeed, but undramatic. The change that befell it in the years 364–7 is positively theatrical.

The god Nodens, with his temple and all its appendages, appears on the site unheralded and unexplained. His name (on which Prof. J. R. Tolkien writes with learning and skill) appears to be Goidelic, indicating the same divinity that became in Irish tradition Nuada of the Silver Hand ; its root should connote ' catching ', but as well as being a hunter and a fisherman he was worshipped apparently as a sun-god and certainly as a god of healing—an intriguing example of the syncretism of fourth-century mysticism working on a primitive cult. Search beneath the temple for an earlier, perhaps a prehistoric, shrine was unrewarded by definite evidence, and the transplanting of the cult from elsewhere remains an open, and to this reviewer at least an attractive possibility : the site was a safe one compared with the open sea-plain, where barbarian raids had already been a menace for many years before 364–7, when (as secure coin-evidence attests) the Lydney temple was built. Its structure, and the rebuilding that followed the collapse of one of the cella piers into an unsuspected swallow-hole, the basilical plan with its unique peripheral ' chapels ', and the religious implications of the whole, are admirably set forth and illustrated. The adjoining *hospitium*, with its curious fore-hall, the baths, and the long *abaton*-building where suppliants for healing probably repaired, as at Epidaurus, for their ' sacred sleep ', are next similarly described in turn : all are contemporary, and the precinct-wall was built last to enclose them. The whole complex is then reviewed in a lucid Summary. Later, the mosaics receive the special treatment that they have too long deserved in vain—it is a surprising reflection that this is practically a pioneer study, and it whets our appetite for Mr Roger Hinks's forthcoming British Museum catalogue. Among the other material, votive objects naturally loom large, especially the well-known dog-figures (the most famous strikingly portrays the Irish wolf-hound) ; Mr Collingwood deals with the inscriptions, including the ' Lydney curse ' ; there is a notable series of pins and of bracelets, and brooches are of normal fourth-century types.

Throughout, the many earlier finds in Lord Bledisloe's possession are published together with the new, and the whole makes a remarkable picture of the life and wealth of the shrine in the last half-century of Roman Britain proper. In no field is this more interesting than that of the coins : here Mr J. W. E. Pearce has rendered signal service, especially in his study of Valentinian mint-marks and of the temple-hoard of Constantinian bronze, with its valuable evidence for contemporary barbarous copies of the FEL. TEMP. type. It is, moreover, this barbarous coinage that leads us on to the last phase of the history of the site, when the decay of the temple buildings and the reconditioning of the prehistoric earthworks made it a ' hill-fort ' once more. The added rampart-material contained much broken fourth-century pottery, and the whole episode is clearly one of sub-Roman barbarism. A remarkable brooch based on a Gothic type reinforces the point, and it is amazingly illuminated by the now famous hoard of 1,646 tiny barbarous bronze coins found against the broken edge of a mosaic floor in the baths, sealed over by a later cement repair. Mrs Wheeler's skill and patience have given us a brilliant classification and an exhaustive but always readable description, fully and strikingly illustrated. It is remarkable that while official coinage as late as Honorius reached the site, these barbarous *minimi* and *minimissimi*, which must belong to the fifth

if not the sixth century, are all based originally on the Constantine FEL. TEMP. design. The whole study makes a refreshing start on what should be a most vital approach to the rediscovery of our Dark Ages. The barbarous coinage is a by-way in numismatics no longer. Incidentally, the total absence of sub-Roman pottery is significant. The fourth-century wares are all regular mass-products : domestic potting in the fifth must here have been dead beyond recall. It is a warning against pressing such negative evidence elsewhere. It also puts a premium on positive evidence. With the Lydney Report in our hands, we shall follow Dr and Mrs Wheeler all the more keenly at Verulamium. CHRISTOPHER HAWKES.

INDEX OF POTTERS' STAMPS ON TERRA SIGILLATA, ' SAMIAN WARE '. *By* FELIX OSWALD, D.SC., B.A., F.S.A., F.G.S. With a supplement. Hand-printed and published by the Author at Margidunum, East Bridgford, Notts, 1931. *pp.* XXIII, 428. 36*s* 9*d post free from the Author.*

It is hard to know whether Dr Oswald's learning or his patient determination calls for the higher praise from the student of Roman archaeology who has (and all must have) this book in his hands. It is nothing less than that reasoned catalogue of ' Samian ' potters' stamps in all their variations, recording the sites and shapes of vessels on which they have been found, to which forty years of study have been looking forward. The task of compilation, in which Dr Oswald has been ably assisted by his son, has been huge —the aggregate runs to some 20,000 items—and that of presentation no less so. For no publisher would undertake a work of such restricted appeal, and so the author set about its reproduction himself. The duplicator which was his first expedient had to be given up and 120 pages and 300 copies scrapped when the process was found unsuitable, and the whole undertaking begun anew with a Roneo hand printing-press. With this Dr Oswald has worked for over three years, in what time he could spare from his official duties, setting up and breaking down the type for every page in turn. The impossibility of reproducing ligatures, aberrants, and retrograde forms save to a very limited extent, was of course inevitable, but while we await his hoped-for album of facsimiles, we cannot stint our prizing of what Dr Oswald has here given us.

The volume is, for its size, pleasant in form : the text is as clear as could be wished, and typographical errors are almost wholly absent. With its strictly alphabetical arrangement, and thoughtfully designed cross-references, it is as easy to consult as could be imagined. And to every museum-curator, excavator, and student its consultation is indispensable.

Great Britain, France, Spain, Italy, Switzerland, Austria, Germany, Holland, and Belgium have all been laid under contribution, and while Dr Oswald acknowledges help from many correspondents, an enormous number of the entries have been obtained by personal visits by himself and his son to inspect originals, wherever housed.

The preface lucidly explains the method of presentation, and takes more than a glance at many of the questions implicit in the names (ethnology, partnership, orthography), in the provenances (spread and distribution of potteries and markets served), and in dating. In the latter regard we have ( p. XV), a select list of dated sites of restricted occupation, while individual potters are dated as a rule by the reigns of emperors or dynasties only—a wise precaution, for even in the list of sites some of the dating-figures look somewhat over-exact (and the earth-fort of A.D. 47 at Caerleon has as yet no more than an ideal existence).

A list of dated potteries follows : here again one or two limiting dates seem a little harsh, *e.g.*, Lubié terminating 160, despite the dating (p. xvii) to 169–180 of the Pan Rock find which included *e.g.* CALETVS, MAINACNVS, MARTINVS, PAVLLVS. Similarly St. Bonnet cannot have ceased work in 130 (*e.g.* CINTVSMVS at Pan Rock) ; perhaps 180 should be read. Errors in the body of the work are as few as omissions : BELSA ARVERNVS rather than ARVERNICVS is perhaps preferable ; the queer occurrence of OF CAI from Pan Rock in the British Museum is unnoticed ; it is not the ɑD monogram, but the full Lezoux stamp DOIICCVS, that occurs at Lowbury Hill ; the first N of MATERNIANVS of Lezoux is occasionally doubled ; MINNA is surely ANNI M retrograde. External stamps ' in the field ' on decorated bowls might have been specified. But these are trifles. The book is a magnificent piece of work, and Dr Oswald is probably the only man who, under such conditions, could have produced it. He has indeed deserved well of the republic of archaeology.

CHRISTOPHER HAWKES.

PRÉHISTOIRE. *Edited by* RAYMOND LANTIER, Conservateur-adjoint, Musée des Antiquités Nationales, Château de St. Germain-en-Laye, Seine-et-Oise, France. Tome I, fascicule 1. *Paris : Librairie Ernest Leroux, 28 rue Bonaparte. pp.* 123, *with* 5 *plates in collotype and numerous illustrations in the text.* Annual subscription to volume of two or more fascicules, 250 *francs* (price of separate fascicules varies).

M. Raymond Lantier is well known as one of the ablest successors of his great countryman Déchelette : a much travelled scholar of European outlook, who occupies a place of vital importance—it was till lately Henri Hubert's—in the French National Museum at St. Germain.

His foundation of a new periodical has been eagerly discussed, and the first number of PRÉHISTOIRE will be as eagerly scanned, no less for the admirable articles which it contains than for the Editor's statement of policy with which it opens. M. Lantier lucidly explains his purpose. His field is the whole range of ' problèmes relatifs aux origines, aux développements, et aux rapports des civilisations du vieux monde depuis les temps les plus reculés jusqu' aux époques des grands empires historiques '. On it there browse already an innumerable flock of Journals, Proceedings, Transactions, Bulletins, Revues, Mémoires, Cahiers, Zeitschriften, Anzeiger, Korrespondenzblätter, Annalen, Vorgeschichtsfreunde, Notizie degli Scavi, and many more, in all languages. The great majority are the organs of local or regional archaeological societies ; others are of national societies or institutions ; a very few are, like ANTIQUITY, independent. In form, scope, and scientific standard they exhibit infinite variety. But for the short article, excavation-report, museum-study, or archaeological note, they provide abundant —often fatally abundant—facilities. For studies which are not so much news-items as fully-fledged essays or monographs, publication is normally more difficult. Such works often run to some length ; they demand a high standard in illustration, and they must be of recognizably permanent value if they are to deserve publishing at all. The journal of a local society is seldom the place for them : in one of national scope they may block the way of many articles important for their current news value. Some societies solve this problem by maintaining two publications, a quarterly or monthly journal and a usually annual volume of weightier matter, as our own Society of Antiquaries does with the ANTIQUARIES JOURNAL and ARCHAEOLOGIA. But few societies can afford this, and in any case there is a real dearth of publications of either kind of truly international range and independent management. ANTIQUITY is almost unique in these respects among

journals that are real reviews, publishing material which, whether from the field or the study, is archaeological *news*. What M. Lantier is aiming at is an equally independent vehicle for ' exposés systématiques ' and ' perspectives synthétiques ', including news articles only in outstanding cases of general interest.

It is a well judged and skilfully planned venture. The names of the Editorial Committee are worth giving : Bégouen, Bersu, Bosch Gimpera, Breuil, Burkitt, Constantini, van Giffen, Mauss, Menghin, Obermaier. M. Lantier is the executive chief. Each annual volume of some 240 pages will be issued during the year in two or more conveniently sized parts. The yearly subscription is 250 francs, or £2 at par. The page is a good broad one, an inch and a half broader than ANTIQUITY, and nearly as much taller—about the same size as the new MAN. The type is a pleasant French face. The paper is strong and shiny, takes line-blocks well, and is also suitable for half-tones, which accordingly appear in the text, and are as good as most half-tones to which fine art paper is denied. But though this means that they are sometimes no more than fairly adequate, important full-page plates are in collotype on special paper. The results in this first number, though not in every case quite excellent, are most promising. For instance, the illustrations of the first article, an admirable study by Dr Henri Martin of the Solutrean sculptures of Le Roc, compare well with the half-tones of Dr Martin's earlier paper in ANTIQUITY (March 1929) III, 45ff : the battle of the two he-goats in relief is remarkable, and the engraved bird is a notable rarity in palaeolithic art. Prof. Obermaier next describes a series of *bâtons de commandement*, harpoons, and other pieces of Late Magdalenian *art mobilier* from the Cueva del Pendo near Santander, which include an interesting fish-pendant, and well illustrate the schematizing tendencies of the period.

The rest of the number is taken up by a masterly study by Dr Robert Forrer of cult-chariots and wheeled vessels throughout the range of their prehistoric varieties, tracing their survivals in various parts of the world into historic and even present times. It is a fine piece of synthesis, bringing together much earlier work (of which Déchelette's is perhaps the best known) on the solar religion of prehistoric Europe and its symbolism, together with comparative material tirelessly collected from all over the world. Nor is it only a study in *Religionsgeschichte* : Dr Forrer is led to a most compelling theory of the origin of wheeled vehicles in general, the secular no less than the cult-chariot being derived from the sun-disc devised by the solar worshippers of the earliest European Metal Age. His imposing mass of material is illustrated in 38 plates, among which the four views in collotype of the famous Iberian chariot of Mérida—Dr Forrer's own gift to the St. Germain Museum—are very properly outstanding.

The appetizing advance list of papers promised shows that Western and Central Europe is to be the main sphere of PRÉHISTOIRE, and French the normal language of its contents, but M. Lantier need not be suspected of meditating any formal restrictions on the full scope of his choice. All readers of ANTIQUITY will wish him well, and we hope that even in these times English subscribers to PRÉHISTOIRE will form a goodly proportion of an ever-lengthening roll. CHRISTOPHER HAWKES.

MAP OF NEOLITHIC WESSEX, published by the Ordnance Survey, Southampton, 1932. *With 35 pages of text and 2 figs.* 4*s*.

This map is published by the Ordnance Survey in pursuance of its policy of surveying the megalithic remains of Britain according to the quarter-inch maps. Sheets 8 and 12, which have already been published, were dealt with in Professional

Papers, but in the present case (sheet 11) the great wealth of material justifies its publication as a map with subsidiary text and list of sites. The result, it will be generally admitted, does great credit to the Ordnance Survey, and in particular to its Archaeology Officer and his voluntary helpers.

The map itself is a thing of beauty as well as an instructive summary of field-work, and is fully in keeping with the artistic traditions associated with the publications of our National Survey. It is printed in five colours, the contours being layered in four shades of brown, every 200 feet. The forest areas have been reconstructed on a geological basis and are shown in green. Similarly the former marshes and the present rivers and estuaries are shown in blue, the sea-coast being shown as at present, owing to lack of data for reconstructing the neolithic coast-line. Behind all this vivid landscape the pale grey ghost of modern England shows through—unnoticed except when wanted for reference—the reverse of the more familiar relationship of things ancient and modern.

There are 187 neolithic sites marked, and these comprise long barrows, burial chambers (formerly known as dolmens), circles of stone, earth and wood, habitation-sites (including causewayed camps), inhabited caves and flint-mines. These are indicated by appropriate symbols in black, the whole showing at a glance the ecology of neolithic man (if one may borrow a term from the botanists) better than a bookful of description.

The inclusion of certain sites, notably circles of stone, earth and wood, of which the ' neolithicity ' is not beyond question, is admitted in the text. This is a result chiefly of the difficulty of defining the limits of the neolithic period, and partly of the fact that the survey was primarily megalithic, which is perhaps rather an inexact classification seeing that megalithic remains were not all necessarily of one period. But the principal difficulty arises from the overlap of the neolithic with the beaker period—assuming that Peterborough pottery is regarded as neolithic and that beakers are relegated to the Bronze Age, even though the actual metal may not have appeared with the first arrivals. If Peterborough pottery is found in one circle, for instance, then circles as a class must be regarded as potentially neolithic, even if they may be more characteristic of the frank Bronze Age, and so all circles must be placed upon the neolithic map lest any truly neolithic examples be omitted. The non-appearance of such apparent, though unproved, causewayed camps as Scratchbury (inner ring) and Rybury (outer ring) is a touch of caution in the opposite direction, doubtless inspired by the failure of the inner ring at Yarnbury to fulfil expectations.*

Some consideration, illustrated by two plans, is devoted to discovering the routes by which the neolithic folk of the chalk plateau of Wiltshire may have communicated with their neighbours of the Cotswolds and the Mendips across the belt of clay-forest which separates them. Satisfactory evidence is given for locating the crossings at two points, near Lacock and near Frome, respectively.

A minor shock awaits the precisionist when he finds that the first two long barrows listed as being in ' Wessex ' are actually in Glamorganshire. This is, of course, because the ' Wessex ' in question is not just the area of the Saxon kingdom, but that of the quarter-inch O.S. sheet which covers that kingdom and a good deal more besides,

---

*See note by Mrs Cunnington, p. 471 *ante*.—EDITOR.

including a corner of Wales. It is excusable in such a case that precision should yield to expediency.

On p. 13 ' fig. 2 ' should read ' fig. 1 ' (twice), and in the footnote on p. 27 there is a minor error of type.

It is only by such distribution-maps as these that bygone races can be studied in relation to their geographical environment. It means years of painstaking team-work among voluntary workers, but its results are abundantly worth while, and this publication is yet one more addition to the ever-growing list of books that are indispensable to the modern student of prehistory. E. Cecil Curwen.

THE GEOGRAPHY OF THE MEDITERRANEAN REGION, ITS RELATION TO HISTORY. *By* Ellen Churchill Semple. *Constable*, 1931. *pp.* x, 737, *frontispiece and* 14 *maps.* 21*s.*

This noteworthy book is the result of many years' work and fills a real gap in our literature better than most authors could fill it. One is impressed not by how much geography Miss Semple knows, but how much ancient evidence she has collected in order to illustrate the intimate connexion of her science with ancient history. Not all her information has been gathered at first hand from the authors, and this, perhaps, is hardly to be expected. Again, she concentrates rather upon Greece and the Levant than upon Rome and the western provinces ; but that is not to minimize the amount of useful information which Roman students will find and appreciate for themselves in her book, even if they wish that the balance had been held more evenly. Nevertheless, it is worth pointing out that to the ancient historian the geography of Greece and its effects are tolerably well known, while no adequate account of ancient Spain exists. To this extent, an opportunity has been missed.

The opening chapter explains briefly and effectively why the study of the Mediterranean matters. Not only do we owe an immense amount to the cultures evolved there, but geography compelled man to shape them in certain definite ways ; how definite we hardly realize until Miss Semple has told us. One would like to hear more of her views upon how it influenced men's thought, for these peep out only rarely, in connexion with geology (p. 35), cataclysms (55), and gods (caps. xviii and xxi). But an interesting subsection could be written, which would add to the value of a second edition.

The book then deals with the general geographic conditions, the barrier boundaries, vegetation and agriculture and maritime activities. The whole treatment is notable for its clarity, and is packed with information, supplied with enviable ease and economy of diction. Ancient historians will read it with gratitude and pleasure. Among the more striking comparisons we would note the frequent reference in agricultural matters to the Japanese, whose unremitting labour provides the norm for the amount of work put into intensive cultivation in ancient times. A useful observation is the comparison of Rome's early activities in the south of Italy and the Ionian sea with those of the Norman kings (76) ; while historians will welcome her conclusion (100), reinforced by rainfall statistics (506–7), that there is no fundamental difference in climatic conditions between now and ancient times. The diagnosis of Egypt's weakness (157) is neat, and prepares the way for the really brilliant sketch of conditions governing the occupation of Syria. But it is much to be regretted that the treatment was not carried

forward into Roman times, during which the treatment of the Euphrates frontier is only explicable upon a geographical basis, and really illumined by the rainfall-map (192), which, however, marks few of the places mentioned in the text. Conversely, map 10 (220), showing the ancient fortifications of the Peartree Pass, makes us long for the text that military exigencies forbid, and moves us to observe that, since excellent studies of antiquities inaccessible to civilians have in the past been published in the Italian *Rivista d'Artiglieria e di Genio*, an examination of these works might enliven the service and improve the efficiency of any young officer. Meanwhile, this is probably the best account of the fortifications that we shall have. After this, Miss Semple's description of Narbonensis, happily defined as 'a geographical handicap . . . converted into a geographical opportunity', and the explanation of the development of the province into Burgundy are worth special attention (248 ff).

The chapter on stock-raising is particularly valuable. One is indebted to the author for illustrating the important part played by the Veneti in horse-breeding (pp. 308, 326), and for her recognition of Polycrates as an all-round improver of stock (309). That versatile tyrant seems to have left few activities untried. In dealing with agriculture in general the discussion of Sparta's grain-resources (349–50) is matched in interest by information as to the proportion of barley to wheat in Attica (351) and as to the weight of that wheat compared with the Boeotian (353); this should be compared in turn with the statistics of general Mediterranean yields (388) for a realization of the poverty of Attic soil. It should also be noted that the author groups the factors which governed the creation of Greek colonies in the following order of importance, namely, food, politics, and commerce (689, cf. also 354). This is the order imposed by natural conditions. Incidentally, these same natural conditions may have brought about dwarfing in stock (324). Interesting also are the remarks upon Rome's early colony-allotments and their size (426–7), especially in relation to the ideal of intensive farming, in which respect we should also note the tribute paid by the author to both Greek and Roman practical knowledge of facts whose cause is only now explained by science (395–6, 407, 420).

Criticism of a book of this type and of such learning is necessarily confined in the main to asking for more. But we would note some cases of failure to reconcile divergent evidence and to collate relevant facts. The evidence for earthquakes in Italy of p. 39 should be reconciled with that of p. 50. There are other ports of Latium (548) than Formiae (595). A bridge is implied at Tarascon on p. 114, while a ferry is correctly mentioned on p. 553. The list of towers as landmarks (591) ought to have included the tower of Caepio (558); but it is interesting as showing how the lighthouse of antiquity was not a danger-signal, but a guide into port. The best-known danger mark, near Sciathus, is of Persian origin (Herodotus, VII, 182) and might have been mentioned. The variant widths of the strait at Rhium (37) are not impressive evidence for geological change, if Scylax is put in his correct order. The change-over from herding to agriculture in Thrace (356) might be connected, on the principles of Professor Carr-Saunders, with its large human resources in Augustan times (318).

Some omissions and errors may also be noted. Why is the crystalline area of Tuscany omitted from the map (18)? The equation Lilybaeum-Palermo would help the modern reader (79). The ancient Pont du Gard (114) had no road-bridge. The exaggerated tale of Cornish tin (140) dies hard: but the evidence about it is not really inaccessible, any more than Haverfield's note on the Cassiterides. On the other hand, ancient exploration sometimes went further than it is given credit for having done:

the expedition of Suetonius in Africa is a perfectly well-accredited case of trans-Atlantean exploration (cf. 145). We wonder why the Delphi charioteer was taken (177) as representative of eastern-style archaic sculpture. The special style of construction evolved in late-Roman Italy (290) to meet wood-shortage is a piece of unverified information. Why, again, should Rome's chief temple be transferred from the Tarquins to Augustus (533)? Finally, Roman Emperors were not crowned, and that was not why Vitellius returned to Rome (118).

Against this list, we would put on the credit side some odd scraps of information which show how wide Miss Semple's reading has been. The reason for the importance of Adalia (122), Byzantium (214), Aquileia (227), Heraclea Pontica (276) and Tarraco (116, whose harbour was better than the modern coast-line suggests) have rarely been better stated. Again, we welcome the many-storied houses of Tyre (42); emphyteusis applied to forest-clearing on Cyprus (272); the ploughing-spade of Thessaly (387); the sewage-farm at Athens (414); artichokes as wealth at Corduba (436); the rivalry of Mantinea and Tegea (450) and the origin of the Eurotas (445–6).

There is rather a heavy crop of misprints. Orenso (19), *incredible* (119), Ostium (128), Boné (128, 284), Mimms (131), Silvius Italus (133), *pied e terre* (144), rock-and-pinion (181), *irredenda* (237), Hyeros (244), Monoei (288), Hippes (306), four acres and a cow (426), Sheria (435), Volci (452), Cossa (452), Vetii (499), Nolscian (545), Calemian (547), Llobrega (555), Barcina (556), Sierra de Tolox (557), 313 B.C. (571), *militae* (229), Megarans (309), Coae (679), Serapheum (705). Port of Augustus is not the modern form of Portus. The book would be greatly improved by the provision of a subject index.

I. A. RICHMOND.

LE MURA DI ROMA REPUBBLICANA; SAGGIO DI ARCHEOLOGIA ROMANA. *Di* GOESTA SAEFLUND. Skrifter utgivna av Svenska Institutet i Rom, I (Acta Instituti Romani Regni Sveciae, I). *Lund: Gleerup* and *London: Humphrey Milford*, 1932. *pp.* XVI, 278, *figs.* 1–72, *plates* 1–27, *plan.* 25 *kr.*

The modest title of this book will convey little to those unacquainted with the remains of the Wall which form its theme. These amount to a few disconnected scraps, each one sufficiently unlike the other to make it uncertain from the evidence on the spot whether they are typical examples of what has disappeared. The earth-bank, which was an integral part of the system in certain sectors, is nowhere visible now; and those who studied it, when it was removed to make room for the present Railway Station, recorded two periods, but preserved none of the evidence for dating them, to secure which would be the first object of any modern inquiry. Add to this a meagre series of laconic literary sources and a set of sketchy but valuable notes taken by Lanciani, and the sum total of the evidence is before us. It is, then, surprising that this material should not have been thoroughly surveyed before, and it illustrates the late Dr Ashby's remark 'that the monuments of the power of Rome in the remotest borders of her Empire are better known than those that lie at her very gates'. Actually, the ancient sources about this Wall had been studied in great detail, but the existing remains had not been exhaustively described as a whole, while Lanciani's notes, made during discoveries and demolitions in different sectors, were not available until presented to the Vatican in 1925. Thus, Dr Saeflund unites this material for the first time, and may justly claim to have placed the historical aspect of the whole subject upon a sound basis by his thorough work.

His principal thesis, that the original wall of Rome, assigned by tradition and by many modern authorities to Servius Tullius (578–534 B.C.), is of fourth-century date, has been advanced before. But never has it been supported by so strong a chain of evidence. For Dr Saeflund discusses in detail each sector whose construction has been dated to the sixth century, and finds in each case that elements of much later date are present at crucial points, though they had been neglected by those who did not look at the monument carefully enough. The thinly-coursed yellow-grey tufa masonry, hitherto taken for typically sixth-century work (on the basis of certain monuments whose dating is undisturbed by the present conclusions), now is proved to be late repairs, looking antique because an antique type of stone-cutting is imposed by the geological formation of the stone. The oldest work, then, turns out to be executed in Grotta Oscura tufa, drawn from quarries inaccessible to Rome until after the fall of Veii in 395 B.C. and signed with Hellenistic masons' marks, whose affinities Dr Saeflund is the first to recognize, having drawn up a complete table of the available evidence from the Mediterranean basin. Thus, the date imposed by the material nicely coincides with Livy, who dates the building of a wall to after 378 B.C., when Rome had recovered from the shock of the Gallic fire. The association of this great work with the Hellenistic cycle of builders is one of the most important conclusions reached.

Servius Tullius is left with the *agger*, which blocked the access to Rome from its northeast plateau, always the city's most vulnerable side. Elsewhere, steeply scarped cliffs offered a natural defence, whose contours have been largely obliterated by the modern city, and can best be visualized by looking at Veii or Ardea. The meagre evidence at our disposal fits the ascription of the first *agger* to the sixth century. It was an earth-mound, five metres high, formed of clean upcast from a ditch of corresponding dimensions. It is, however, uncertain when that earth-mound, being fronted in 378 by a wall at least eight metres high, received its heightening. The author delays the measure until the Wall was refurbished to ward off Hannibal in 212 B.C. But it is not illogical to assign it to the moment when the Wall came into being, and a side-light is thrown upon the quality of the evidence available when it is realized that either interpretation can be admitted.

The Wall owes its final form to Sulla, who, dealing with the Marian disorders of 87 B.C., equipped it with artillery. At the gates, where attack might always be anticipated, permanent casemates for spring-guns were provided, two of which remain, the well-known one on the Via di Porta S. Paolo and the other in the Palazzo Antonielli, whose identification we owe to Dr Saeflund. It is suggested that the *agger* was once more extended at the back, and that this enlargement of the base stands for a general doubling of the wall in height. But the extension itself is proved to go back to an epoch before Sulla by its association with the niche of the altar of Verminus, which was renovated in Sullan days ; while the heightening lacks cogency as an interpretation of any extant remains. In date, the backward extension might be as old as the Hannibalic scare of 212 B.C., and the revetment thereof a stage later ; and the explanation that a backward reinforcement of the mound was required if it was to serve as an artillery-platform, without any increase in height, is at least worth examination, for it is unnecessary to connect the first provision of these machines with Sulla. Dr Saeflund, in fact, is too inclined to telescope all these operations into one Sullan scheme, though decisive evidence on the point will hardly now be forthcoming.

It is hardly the place here to deal with the questions of topography and building-materials which are raised in some detail by Dr Saeflund, and demand a full

discussion. But we may call attention to the chapter on analogous walls, which forms the basis for the following theory of evolution, as applied to Italian town-walls in general. The earliest fortifications were slight reinforcements of steeply scarped cliffs, supplemented by earthen ramparts where this was necessary, as at Rome and Ardea. The chief element was the citadel. Next followed the terrace-wall and its free-standing accompaniment, never very high, and often associated with an earth-bank. These remained the standard type until the fourth century, when the Hellenistic and Carthaginian development of siege-tactics began to demand higher and stronger defences. But, although new walls were built in accordance with this need, the adaptation of old ones followed sluggishly, probably more slowly and with more exceptions than here suggested. The third and second centuries saw the creation of walls in terraced series, and the building of some very high ones, among which Osimo might have been quoted. But the material on which to build these generalizations is rather scanty, and Dr Saeflund fails to observe that the Sullan age seems to have gone back to the older standard of a low wall, well-protected by towers furnished with artillery, as at Fondi and Terracina. This point has some bearing upon the question whether the Rome wall was heightened in its latest period.

Among less general matters, it may be noted that triple and double gates are less rare than is assumed, and it is tempting, in view of the Hellenistic connexions of the builders of 375, to think that the great gate of the Euryalus (see ANTIQUITY, September, 1932, pp. 262–9) was the model for the Porta Trigemina. The date when the portcullis was introduced into Italy is uncertain, but its presence is not really well attested before the Sullan age, though one is prepared to carry the date back at any moment. It occurs, for example, in the second-century wall of Carmona, in Baetica. It is difficult to agree with the suggestion that the first wall at Ostia can be so late as the Hannibalic wars, in view of the town's association with the early maritime colonies, and we would draw attention here to the likeness between its plan and that of Pyrgi. Finally, round-topped merlons came nearer Italy than Gjölbaschi: they were used at Motya by the Carthaginians.

The book is well-illustrated, and the plates are beautifully drawn in a fashion that suits the subject well. We regret, however, that the text-figures were not larger, and, in some cases, better produced. But the book as a whole is a great credit to its author and to the Institute under whose auspices it is published. I. A. RICHMOND.

DISTRIBUTION OF THE ABORIGINAL POPULATION OF MICHIGAN. *By* W. B. HINSDALE. Occasional Contributions from the Museum of Anthropology of the University of Michigan, no. 2. *Univ. of Michigan Press, Ann Arbor, Michigan*, 10 June 1932. *pp.* 35 *and coloured map. Price not stated.*

This admirable geographical study is based upon the data provided by the Archaeological Atlas of Michigan.* It consists of a detailed description and analysis of the distribution and relative density of aboriginal population in the State of Michigan. The writer's attitude is thoroughly sound, and he bases his conclusions upon the character of the aboriginal environment. He shows (and illustrates by a map) that the areas where deciduous, or mixed deciduous and coniferous, forest prevailed were those preferred by the aboriginal population; the reason being that here the food

* See ANTIQUITY June 1932, p. 231.

supply, animal and vegetable, was most abundant. This natural environment is in its turn determined by the surface geology (p. 6). 'The man-land ratio, for people in the hunting-agricultural stage of culture, as were the Michigan Indians, depends upon the productivity or fertility of the soil in regard to plant and animal products available for and convertible into human food' (p. 8).

There are some interesting, and sometimes entertaining, sidelights upon the policy of capitalist exploitation which everywhere in the world has wrought such havoc. 'The Indians could not endure ruthless destruction of any of the objects of nature, animate or inanimate. They were the first and most scrupulous conservationists. They thought it improbable that Hell, as described to them by the missionaries, was a place where fire burned eternally because there would not only be a great waste of timber but, they argued, the woods could not last that long' (p. 21). This sensible concrete argument is irrefutable, and may be commended to the consideration of, say, the Catholic Evidence Society.

Another interesting sidelight on the economic basis of, in this instance primitive, warfare is cast by the statement that 'quarrels over the privileges of harvesting the wild rice in Green Bay and contiguous waters often broke out into open warfare among the Michigan and Wisconsin tribes' (p. 22).

But it is the demonstration of the environmental control of population density that forms the most valuable part of this monograph. It is backed up by figures. Those who are interested in prehistoric European distributions and in the similar control there exercised by environment will welcome Mr Hinsdale's analysis, which is based upon more easily ascertained facts. It is easier to restore the primitive vegetation and faunal distribution in a 'new' country like America, where it survived down to modern times. Documentary accounts of it supplement botanical observations that can still be made in surviving patches. But, whatever method we employ, and whether the task be relatively easy or (as in Europe) difficult, this is the way to study primitive man. Here is a branch of enquiry which will be followed with increasing frequency as data accumulates in sufficient quantity for mapping to be possible. For, until the data are numerous, the negative evidence (of blank areas on the map) may be misleading. We look forward to other and perhaps more elaborate studies on similar lines. O.G.S.C.

LOCAL PAPERS, ARCHAEOLOGICAL AND TOPOGRAPHICAL—HAMPSHIRE, DORSET AND WILTSHIRE. *By* Heywood Sumner, F.S.A. *Chiswick Press*, 1931. *pp.* 248. 12*s* 6*d*.

Any recommendation of a book by Mr Sumner is superfluous. As archaeologist, artist and writer of fine prose he holds a unique position, and this volume of collected papers, reprinted from various societies' transactions, is a worthy successor and companion to his previous books both in archaeological content and charm of illustrations.

His account of the excavations of six barrows on Ibsley Common is of particular importance and interest. Barrow 1, an abnormal disc- or rather saucer-barrow, yielded a cinerary urn of middle Bronze Age form, which gives an indication of date for this type of barrow. The constructional details recorded in the other (bowl) barrows of the group are of all the greater importance since such features were almost universally ignored by the excavators of the last century, on whose work our knowledge of the middle Bronze Age has mainly to rest.

A survey of Comb's Ditch, in Dorset, and a comparison with its neighbour, Bokerly Dyke, is a valuable contribution to the study of these linear earthworks. The student of minor earthworks will find puzzling and mysterious examples described and planned—the Bee Garden ; the earthwork at Cowgrove, for which a Saxon origin is suggested ; and the Fairy Ring in Pinnick, prosaically but convincingly explained in picture and print as a medieval pig-pound.

A reprint of Norden's MS survey of 'Copices in New Foreste', 1609, is an attractive excursus, and forms a link between the archaeological and topographical papers in the book. It is to these latter that the archaeologist, his scientific thirst assuaged, will turn a second time, and with Mr Sumner as a perfect guide will once more explore the Latchmore Brook from its source to the Avon, examine hill-top ponds in flood and drought, or meditate on venerable trees and the passage of years.

Mr Sumner's plans are, as always, both beautiful and interesting. Although unconnected with archaeology one cannot resist mention of the very attractive map opposite p. 215, with its deliciously wicked vignette of picnickers ignoring a cautionary rhyme.

STUART PIGGOTT.

TEXT-BOOK OF HISTORY FOR THE 5TH YEAR GYMNASIUM AND 1ST YEAR TEKNIKUM. *By* O. V. TRACHTENBERG, A. E. GUKOBSKY and V. N. BERNADSKY. *State Elementary-Pedagogical Publishers, Moscow and Leningrad*, 1931. *pp.* 183, *illus.* 70 *kopeks.*

Universal history is not yet taught in British schools as part of the established curriculum—or indeed at all. When therefore I came upon a classroom of children in Tiflis who were learning Universal History it seemed worth while enquiring further into such an interesting phenomenon. The text-book they were using was on sale in the town ; I acquired a copy, and went through it with my Russian companion who translated the essential portions. I cannot claim to have read the book, of course, but merely to have been enabled to grasp the principles of its arrangement. It is intended for children of about 14. It begins with the Ice Age and the First Men, and ends with the eighteenth century A.D. The first 40 pages deal with primitive man ; then follow 34 pages on the classical civilization of Greece and Rome ; the remaining 106 pages are devoted to the Dark Ages and modern times.

There is one obvious major criticism of this scheme ; it excludes the Ancient East where civilization arose. It was in the East that big accumulations of capital can first be recognized historically—in Mesopotamia in the form of temple store-houses, in both Mesopotamia and Egypt in irrigation works and ships. Now it is in accordance with the Marxian, materialist, conception of history that the main path of human progress has hitherto been through the accumulation of the means of production (Marx's 'instruments of labour') into a few hands. For instance, an irrigation system is impossible without unified control. But there is no mention of these early civilizations in the book. We pass from palaeolithic man to the lake-village, as if the latter were an essential link in the chain of progress, which is historically incorrect. The first 'productive economy' of Europe was introduced by the Danubians, who acquired it elsewhere. It was in the East, not in Europe, that human society evolved ; and western Europe was until much later merely a marginal region of refugees or at the most of barbarians off the main line of the cultural evolution of humanity.

Religion is dealt with in summary fashion on Marxian lines. An opportunity

is missed of emphasizing the futility of the Cult of the Dead, which assumed such great proportions during the megalithic period in Western Europe, to say nothing of the Pyramids. The treatment appears to be ethnographic rather than historical.

Throughout the book emphasis is rightly given to the economic basis of society, and to the life and conditions of the workers. There is great need for human history to be thus rewritten on Marxian lines, and so far as we are aware no more ambitious attempt has been made to achieve this. In Marx's time it would have been impossible, for then whole epochs which the spade has revealed were completely unknown. No doubt the need will in due course produce the man and the book, or books. Meanwhile the younger generation will have to be content with such imperfect but by no means useless productions as the present. O.G.S.C.

THE ARCHAEOLOGY OF SOMERSET. *By* DINA PORTWAY DOBSON. *Methuen*, 1931. *pp.* 272, 58 *illus. and* 7 *maps.* 10*s* 6*d.*

Mrs Dobson's book provides a welcome and exhaustive guide to the archaeology of Somerset and is a notable addition to Mr Kendrick's series of county archaeologies.

Somerset does not lend itself particularly well to treatment as an archaeological province. It corresponds to no clearly defined geographical region, but contains within its borders areas as different in their relation to human occupation as the limestone plateau of Mendip, the alluvial plain of the Somerset Fens, and the sandstone moorlands of the Quantocks, Brendons, and Exmoor. This being the case it is inevitable that Mrs Dobson has been obliged to arrange and present her material in the form of a catalogue of archaeological discoveries, epoch by epoch, prefacing each chapter by a short consideration of the special characteristics of each culture in Britain and the way in which its influences are likely to have impinged on the county. In this enterprise she has succeeded, but the distribution maps, so important in a book of this kind, leave much to be desired. The maps are not bad in themselves, but their reproduction is far too small and the crowd of contour lines made necessary by the hilly nature of much of the country makes it very difficult to track down some of the symbols. This trouble clearly arises from a question of cost, and it is a pity that Messrs. Methuen have permitted yet another of this series to suffer from this defect. Good illustrations and clear maps are prime necessities in archaeological publications and colour printing with better paper would greatly improve the maps in this volume.

The first chapter deals admirably with the geography and geology of the county and is a model of how this matter should be handled on a small scale. There follows a chapter on the Palaeolithic Age, one surprisingly named ' Beakers and Megaliths ', and so on through the Bronze, Early Iron, Roman, and Saxon Ages to complete the book with two chapters on camps, earthworks, and trackways. There is also a good archaeological gazetteer.

The richness of Somerset in Upper Palaeolithic remains is well-known and receives ample treatment in this book. Mrs Dobson has also made out her case for the ' Beakers and Megaliths ' title on the local evidence, though she has been inclined not to recognize the comparative lateness of the stone circles as compared to the megalithic tombs.

An interesting development in Somerset prehistory which has begun to take shape too late for inclusion in the book under notice is the growing volume of evidence accumulating as a result of the local work of the Bristol University Spelaeological Society, showing that Mesolithic flint-working technique survived in Somerset to overlap with that of the early Metal Age. In this Somerset is not alone.

Leaving the Bronze Age, the later stages of which are not very clear in Somerset, we come to the Early Iron Age which is particularly well-represented by the lake villages of Glastonbury and Meare, Wookey Hole, famous hoards, and several of the finest hill strongholds in Britain. For the Roman occupation there is Haverfield's article in the Victoria County History which has lightened labour in a county which is embarrassingly full of Roman material.

The Saxon chapter contains a valuable historical account of the vicissitudes of the region at this period, but has little archaeological material to deal with before the opening of the Christian period. In spite of Glastonbury the county is poorer in surviving Anglo-Saxon remains than would be expected. The Alfred Jewel, perhaps the county's greatest archaeological treasure, receives due attention, but it is difficult to reconcile plate VI where the jewel is said to be represented at full size with the statement on p. 184 that it is 6.3 inches in total length.

In the chapter on earthworks there is a surprising slip in the account of Wansdyke. It is said on page 222 that the age of the dyke was proved by excavation in Wiltshire by Professor Haverfield, whereas this famous test excavation was carried out by General Pitt-Rivers. Again, it is impossible to concur with the view of the late Mr Albany Major that the Wansdyke began on the Severn shore by Portishead and made its way across the Failand Ridge, through Ashton Park, to join the generally accepted part of the dyke at Maesknoll on Dundry. The few traces which Mr Major considered to represent its line in this area are either of no great antiquity or are parts of Celtic field-systems, which are very prolific here. This view is supported by the experience in the field of Mr O. G. S. Crawford.

There is also a mistake on p. 206 when it is claimed that the circular earthwork called Old Barrow overlooking the sea near Lynton is a sepulchral monument. It is fairly certain that this is a Roman signal-station, and it is one of the tasks before Devon and Somerset field-workers to find the sites of others which may reasonably be assumed to exist.

A last point. It is a pity that the sketch of the bronze anvil recently found at Flax Bourton should be so placed on the dust cover of the book as to look like the portrait of an excessively cadaverous person with a long nose putting out his tongue at the purchaser! Surely this should have been shown with the body of the anvil horizontal and the holding spikes pointing down?

This book is strongly recommended as a guide to the present state of the archaeology of Somerset and Mrs Dobson is to be congratulated on the completion of a valuable piece of work.

FARA. Ergebnisse der Ausgrabungen der Deutschen Orient-Gesellschaft in Fara und Abu Hatab 1902–3 von ERNST HEINRICH. Herausgegeben von WALTER ANDRAE. *Vorderasiatische Abteilung der Staatlichen Museen, Berlin*, 1931. *pp.* VII, 156, *with* 69 *figs. and* 78 *plates.* 90 *Rmk.*

For many years Fara has figured prominently in all discussions of the Early Dynastic Period in Sumer. For the large collection of archaic cuneiform tablets found there supplies the earliest information as to Sumerian culture, and all attempts to solve the chronology of the finds from Ur and Kish have been based on them. In this well-produced volume we are for the first time enabled to review the material culture of the writers of the Fara tablets, and to compare it with that known from other

Sumerian sites—from Tello, Assur, Kish, Ur and Khafaje. Unfortunately the outstanding question, namely which precisely of the objects here figured are, for certain, contemporaneous with the tablets, cannot be answered as definitely as one should wish ; for very little is known of the circumstances in which each object was found. The authors are acutely aware of this, and appropriately introduce the volume with a reminder that the work at Fara, undertaken 30 years ago, was rather in the nature of an archaeological reconnaissance, a mere episode in the long campaign of pre-war German excavations in Mesopotamia, and that, of its personnel, Koldewey soon became completely absorbed by Babylon and Andrae by Assur. All the more do they deserve our gratitude for not shirking the task of working up old and admittedly unsatisfactory notes while a variety of circumstances provided ample excuse for dropping the matter altogether. But fortunately the very method in which the investigation of Fara was carried out counteracts the effects of insufficient recording to some extent. For Koldewey's uniform trenches touched almost exclusively one particular stratum, as the homogeneity of the material contained in this volume shows, and the links with all the other sites where Early Dynastic remains are found, and which we have enumerated above, are numerous and convincing. If, therefore, we cannot expect any help from this collection of material when at last the subdivision of the Early Dynastic Period itself is undertaken, the danger of ascribing to that period as a whole objects which are earlier or later, is not great. But there are some terracotta plaques (pl. 25) which might really belong to the period of the Third Dynasty of Ur, while at least one seal-cylinder is definitely Akkadian (pl. 59 c). On the other hand some of the seal-cylinders and seal-impressions may well be older than the bulk of the material (*e.g.*, the pot illustrated on pl. 18, i, seems to belong to the Uruk Period). Then there are some fine polychrome jars, here adequately published in colour (pls. 14–16) which are in shape and design typical representatives of the Jemdet Nasr period.* We should, in fact, refer here to the very interesting investigation which Dr Erich Schmidt made at Fara during the winter of 1931 on behalf of the University Museum of Pennsylvania (*Museum Journal*, XXII, 193 ff.), with the express purpose of elucidating the stratification. He went down to virgin soil and found that the site was only inhabited after the Jemdet Nasr period, just as Kish was, or at least the region of Kish touched by M. Watelin's deep shafts. He also discovered another fact which explains why the German finds at Fara are so homogeneous : the Early Dynastic strata were separated from the earlier Jemdet Nasr culture by a sterile alluvial deposit. We may add that a similar layer was observed in exactly the same position at Warka, and these deposits (if we *must* find a historical reality underlying myths) have a better claim to represent the Flood of Sumerian tradition than those at Ur or at Kish, the first of which comes too early, and the other too late in the history of human settlement in the plain to accommodate the prediluvian hegemonies of various cities. But to return to the new information obtained by Dr Schmidt, the date of the large circular cellars or granaries of planoconvex bricks, which was uncertain in 1902, is now established as Early Dynastic ; while the fact that they were reused as a burial-place in the time of the third Dynasty of Ur makes it less imperative to consider the inscribed cone discussed in the German volume and also belonging to that period (p. 4f) as an

*A pot like, e.g. Corpus Vasorum II, pl. 10, 3 supplies the type of the sherds, pl. 14, i and 1 which seems to worry Herr Heinrich on p. 35.

importation ; and as this cone is the only piece of evidence for identifying Fara with the ancient Shuruppak, this matter is of some consequence.

We may now summarize the contents of the book as far as it falls outside the scope of the more general remarks which precede. It opens with a short description of the campaign by Andrae, which is interesting because we are always apt to forget that the Ford car is revolutionizing the formerly unchanging East at such a rate that it is already difficult to recall the difficulties and privations (but also the long periods of quiet and the absence of hurry) which pre-war excavators experienced. Heinrich next discusses the architectural material, including a most interesting group which he explains (p. 14) as an office of the period. It consists of three connected rooms, situated immediately behind the entrance of a house, but completely separated from the living quarters. If we are astonished to find them equipped with a hearth and a water-drain, we may remember that water was necessary to soften the tablet-clay and fire sometimes to harden it. And as a matter of fact, numerous tablets were found in these three rooms.

If it is impossible to refer specifically to the numerous finds now published for the first time, we must in any case draw attention to a set of artist's sketches on clay (pls. 27–32). There are also glass beads, and an analysis of these is given ; they would provide a first class sensation if only the experts would declare that they were made by man and are not natural glass. But the experts (and all whom the reviewer has known to be called in by archaeologists) do not commit themselves (p. 79). There are two analyses of tools (p. 89) which contained 97 per cent. copper, and for the rest mostly arsenicum and nickel. This tallies with the analysis of the copper from Ur and Kish, by Professor Desch, but not of that from Khafaje which is contemporaneous ; and it may be that the region south of modern Baghdad obtained its copper from Oman, but not the more northern regions (see ANTIQUITY, II, 452 ; is this article by Mr Peake perhaps the source from which the periodical UMSCHAU, in the same year 1928, got its strangely anonymous information ?).

The collection of seals and seal-impressions is carefully studied and too rich for any detailed comment to be possible here. The grouping of the seals according to their representations is particularly appropriate in a collection which is of one period ; for it brings together designs which elucidate one another ; and some of them only then become intelligible. The last chapter of the book gives an account of the short exploration of the neighbouring Abu Hatab, where the remains proved to be contemporaneous with Ur III.

This book apparently represents an attempt to reduce the cost of scientific publications by eliminating publishers as agents. This is suggested if one compares its price with that of similar publications of the Deutsche Orient Gesellschaft. Let us hope that the courage of Dr Andrae in issuing it through his own department of the Berlin Museum will be rewarded by a sale commensurate with the high scientific value of the material which it contains. H. FRANKFORT.

AN ARCHAEOLOGICAL TOUR IN GEDROSIA. *By* SIR AUREL STEIN. Memoirs of the Archaeological Survey of India, no. 43. *Calcutta*, 1931. *pp.* 211 *with* 33 *maps*, 13 *plates and* 64 *figures*. 32*s* 6*d*.

Sir Aurel Stein's tour through eastern and southern Baluchistan forms only a small part of his plans for further exploration and his report may be considered as a collection of material. Naturally it takes the shape of a travel-journal, but with

this peculiarity that the account of the author's progress is made subsidiary to the discussions of ancient remains which were surveyed, and of trial excavations which were undertaken at a few points when time and circumstances permitted. It is simply amazing that it should have been possible in little more than four months to cover an area of some 270 miles from north to south and 300 miles from east to west; and to bring home so rich a harvest. Its full value will only be seen when at two or three points within this territory excavations are undertaken on the lines of Mr Hargreaves' exemplary work at Nāl. Then, no doubt, the finds published in this volume will fall into place and the whole of the region which Sir Aurel Stein succeeded in exploring by dint of much hard travel will be incorporated in our picture of the ancient world. For the moment the following conclusions are suggested.

Baluchistan was more densely populated and more intensely cultivated in chalcolithic times than in any subsequent period. There is now a population of only 2 persons per square mile (Sir Aurel Stein found difficulty in getting help for investigating mounds). The remains of ancient settlements are found in considerable numbers along river-beds which are only rarely in spate nowadays. Sir Aurel repeatedly insists on the difference in climate which must, without a doubt, explain the mere existence of the ancient settlements (pp. 34, 106, 131–2 and elsewhere). It may be recalled that Sir John Marshall (*Mohenjo-daro*, I, 2–5) attributes the change not so much to reduced winter-rain as to a withdrawal of the monsoon. This same authority has also studied the pottery from Baluchistan (*Mohenjo-daro*, I, 96–100) and this is of exceptional importance, for it appears now that those features of the Baluchistan pottery which are most inexplicable to the student who approaches it from the west (for instance, the prevalence of red body-colour and a number of designs) find their parallel in the Indus civilization. Sir John actually considers the Baluchi wares as mixtures in which Indian and Persian elements are present in varying degrees. A study of the plates in Sir Aurel Stein's volume leaves no doubt as to the identity of the Persian elements. They belong to that Iranian Highland culture, which is best known from Susa I, which sent off-shoots into Mesopotamia as soon as the Plain became habitable (as the discoveries at al'Ubaid, Ur, Warka, Samarra and other places prove) but which is now also traceable throughout Persia, at Persepolis, Hekatompylos, Mohammedabad and eastwards into Seistan.* We do not maintain that all the Chalcolithic Baluchistan pottery which we actually possess now is of that very early date. On the contrary, some of it Sir John Marshall thinks to be contemporaneous with the Indus civilization, of which the only stage so far discovered is shown by the finds at Tell Asmar to be contemporaneous with the Dynasty of Akkad in Babylonia (*The Times*, 26 March). But even then the western elements surviving in the Baluchistan pottery of the middle of the third millennium must go back to the much earlier Iranian Highland culture. This is shown in the curious way in which all the stages of Baluchistan civilization discovered by Sir Aurel Stein are individually linked up with the Iranian Highland culture, independent of the differences which they show amongst themselves. He distinguishes a first stage represented by a very fine pottery for practical use, known from Suktagēn-Dōr, Mehi, Kulli and other sites, and showing, amongst other decoration, rows of goats or ibexes identical with those of the disintegrating Susa I style

* This whole matter is treated in detail by the reviewer in his *Archaeology and the Sumerian problem*, University of Chicago Press, Chicago 1932, where he endeavours to show that these earliest settlers in Mesopotamia are the Sumerians.

found at Tepe Khazineh and Tepe Musyan. A later stage of civilization in Baluchistan is known from graves which were dug in Shahi Tump after buildings (of mud brick walls on stone foundations) belonging to the first period had been deserted. On the other hand this later stage uses pottery, which Sir Aurel Stein believes to be made exclusively for funerary use (pp. 98, 101) and to retain obsolete traditions (p. 103). This pottery is indubitably linked up with Susa I by its trio of typical shapes (straight-sided beaker, hemispherical bowl and squat pot) as well as by its decoration. That there are some links with earlier Baluchistan wares Sir Aurel Stein also admits (p. 70). Nāl, discussed in ANTIQUITY, 1930, 396 ff., stands rather apart but enters, if somewhat more distantly, into the same group, appearing as an independent and advanced development founded on a basis common to the whole Iranian Highland culture. Sir Aurel Stein thinks it to be contemporaneous with the tombs of Shahi Tump (p. 103). Sir John Marshall, on the other hand, considers its makers intrusive in eastern Baluchistan, stresses the relations with the west and thinks it earlier than anything found at Mohenjo-daro and Harappa ; which means, by implication, that it would also be earlier than a number of red-faced Baluchi wares related with the Indus wares (*Mohenjo-daro*, I, p. 100 with notes). He also mentions some new evidence obtained by Mr N. G. Majumdar in Lower Sind, which perhaps goes to show that light-faced fabrics such as those from Nāl and from the Iranian Highland culture in general precede the red-faced fabrics. Should this prove correct then we should have to assume that not only in Baluchistan but even in Sind the Iranian Highland culture preceded that which is revealed by the excavations, and that it descended into the plains beyond its eastern mountain ranges just as it colonized the Plain of the Two Rivers.

It is interesting that even in the earliest known stage of civilization in Baluchistan copper was well established in use, so that not only ornaments and weapons, such as flat axes and spearheads, but also mirrors, were made of it, as at Susa I. Still more unexpected is the discovery of a piece of glass, part of a ring or of a handle, which was found deep down in Shahi Tump (p. 94). Terracotta figurines of goddesses and humped bulls abound. Twice, once in a grave and once in presumably earlier layers, a copper object of the type commonly called stamp-seal was found (pp. 92, 98).

As to the modes of interment three different methods are found in use, in Baluchistan as well as in India, in chalcolithic times :—(1) complete burial, (2) fractional burial, in which only a fraction of the bones are collected and buried after the body had been exposed to beasts and birds, and (3) burial of what remained of the body after cremation. Sir John Marshall (*Mohenjo-daro*, I, 79–90) comes to the conclusion that the post-cremation burials are typical for the Indus civilization, and that the other two types are due to other (western) racial groups remaining faithful to their own funerary customs. This may well be so. But in addition we should observe that in Baluchistan not much importance seems to have been attached to strict rules in matters of interment ; even within the range of one single type of burial variations occur. With the complete interments, the position of the body in the grave is sometimes contracted, sometimes supine and extended (p. 95). In the post-cremation burials we find sometimes the remains of the body gathered after cremation and buried in a pot, sometimes the remains are left in the place where the cremation had taken place and the funerary gifts are placed round them (pp. 155, 157–8, 163). At Nāl Mr Hargreaves found fractional and complete burials which were apparently contemporaneous. It seems to us that the absence of strict funerary rules is characteristic

for the Iranian Highland culture : for in the west we find within its scope the same variety. At Susa we find fractional burials in pots, but also complete burials in contracted positions, while in the related graves at Ur, of the al'Ubaid period, we find the complete burial in supine extended position.

Two complete skulls and some bones were saved, and are studied by Lt.-Col. R. B. Seymour Sewell and Dr B. S. Guha in an appendix ; the people, like those of Nāl and Anau, were dolichocephalic.

Finally it may be stated explicitly that the new material discovered by Sir Aurel Stein, and that found in the Indus Valley, cannot be expected to reach its maximum of scientific utility until a representative collection has been sent on exhibition to this country for archaeologists to study. It is an urgent problem to determine what connexions existed between the new civilizations discovered in the east, and those of Egypt and Babylon from which we consider our own to be directly descended. If questions of contact between civilizations have to be decided on the testimony of material remains alone, technical qualities and processes of manufacture gain a unique importance ; and no opinion on any of these matters can be formed merely from reproductions, however adequate these may be. H. FRANKFORT.

LE FEU ET L'INDUSTRIE DE PIERRE ET D'OS DANS LE GISEMENT DU 'SINANTHROPUS' A CHOU-KOU-TIEN. *By* H. BREUIL. *L'Anthropologie*, 1932, XLII, 1–17.

LE FEU ET L'INDUSTRIE LITHIQUE ET OSSEUSE A CHOU-KOU-TIEN. *By* H. BREUIL. *Bulletin of the Geological Society of China* (*Peiping*, 1931) XI, 147–54.

NOTICE OF THE DISCOVERY OF QUARTZ AND OTHER STONE ARTIFACTS IN THE LOWER PLEISTOCENE HOMINID-BEARING SEDIMENTS OF THE CHOUKOUTIEN CAVE DEPOSIT. *By* W. C. PEI. Ib. id. 109–42.

The discovery of fire and the invention of tools were two of the earliest and most epoch-making discoveries of human history. Much legitimate but necessarily inconclusive speculation has been made about the earliest sub-human and human efforts. Here at last in China we have got some facts. What is more, we have got ' man and his works ' associated in the same deposit. It is too often forgotten that we really know almost nothing of the bodily form of the *coup-de-poing* makers of Chellean and Acheulean times ; and *coups-de-poing* are the commonest form of palaeolithic object in this country, to be found in hundreds of gravel-pits all over the London and Hampshire basins.

Mr Pei has given us a careful account of the objects themselves—illustrated by drawings and photographs. The implements are of quartz—a peculiarly resistant medium to the knapper and also, it would seem, to the photographer. And here we must interpose a few general remarks about the photographic illustration of prehistoric objects. These illustrations are neither better nor worse, in our opinion, than many others of their kind in scientific proceedings. The background is cut away, however, and the general impression left is a blurred and unsatisfactory one. These defects are to some extent remedied by the drawings, which cannot however be compared with those of some French and English prehistorians. We realize that studio finesse

may not be compatible with rapid publication 'in the field'; what we regret is that so many really expert amateur photographers in Europe are wasting time and money over precious studies of bunches of grapes and the like, when here is a real technical problem to be tackled. Here are hundreds of the oldest implements of humanity, implements which necessarily can only be seen by a tiny fraction even of specialists. Their cultural import is immense; but it can only be realized by the majority of students through photography—we doubt whether even casts would be adequate. We should like to see a few type-specimens subjected to the expert studio treatment of a skilled artist-photographer, who would experiment with lighting and background, and publish the results *de luxe*. Such a task is more worth while than many of the publications *de luxe*—some of them archaeological—to which the world is treated.

However, we hasten to return and assure Mr Pei that we fully realize the impossibility of such elaborate treatment in this instance; and our criticisms may therefore be irrelevant in this particular case. Early publication is always more important than *finesse;* and both he and Dr Davidson Black have consistently followed an irreproachable and commendably scientific policy both in the style and promptitude of their publication, and, it may be added, in their attitude to the gutter press.

The implements, so far as one can judge without seeing them, seem to be extremely rude and to consist for the most part of 'flakes', using the word to connote 'irregularly shaped pieces which have evidently been formed by fracture from some larger stone or fragment' (p. 122). Professor Breuil hints at the possibility of both the man and industry of Chou Kou Tien being ancestral to our Mousterian. Of the human origin of the industry there can be no doubt. The stone of which they are made is foreign to the immediate locality, and can only have got there by human agency. This acute observation was first made ten years ago by Dr J. G. Andersson, five years before the world-renowned skeletal remains were found; and indeed their discovery was a confirmation of his brilliant reasoning. The implements do not therefore suffer from the defect which necessarily handicaps stones claimed to be artifacts but found in deposits that have never yielded skeletal remains of man. This defect *may*, of course, be merely accidental, but it remains a defect.

It is not, however, necessary to rely only upon worked stones for the proof that *Sinanthropus* was a tool-maker. 'The workman of Chou Kou Tien', says Professor Breuil (p. 11), 'made extensive and systematic use of bone, deer's horn (*ramure des Cervidés*) and the horn of ruminants of small size (*Gazelles et Spirocères*)'. No illustrations of these are as yet available. Implements were made by cutting the horn with a stone gouge, the point selected for cutting having first been burnt. The piece was finally severed by breaking. The result consisted of objects resembling clubs and daggers. Out of the frontal bones of deer were made cups, by trimming the edges. Some of these have that part of the lip which could be placed against the mouth polished by use (Breuil, p. 11). The long bones of animals were also used, the articular head forming a convenient natural handle; the other end was shaped to a point or edge which often bears traces of usage.

Such in briefest outline is the 'industry of Chou Kou Tien', baldly summarized from the masterly account of Professor Breuil. He concludes with some remarks which we can only refer to here by the statement of points.

1. 'The idea of forcibly taking from animals the weapons which Nature has given them is, when one reflects upon it, a more primitive one than that of fashioning

a stone. It is quite possible that an age of horn (*bois*) and broken bone preceded the age of worked stone, as more than one prehistorian has thought '.

2. The implements found are the work of *Sinanthropus* and not of some other type of man.

3. ' The existence in so primitive a skull, one so remote from that of all other known types of mankind, of a human aptitude for inventing tools and implements designed to make others, does indeed open up an unexpected vista of the most distant past of our species'. O.G.S.C.

THE MAP OF ENGLAND, or About England with an Ordnance Map. *By* Colonel Sir Charles Close. *London : Peter Davies*, 30 *Henrietta Street, W.C.*, 2, 1932. *pp.* x, 166, 8 *illus.* 6*s.*

No one is better qualified to describe the map of England than Sir Charles Close, the author of the principal text-book on Topographical Surveying, a former Director General of the Ordnance Survey and President of the Royal Geographical Society. But it would have been quite possible to have all these qualifications and yet produce an unreadable book. The present book is eminently readable—an example of a ' popular but authoritative ' production that will also, we hope, have a ' world-wide circulation '. It was time for such a book, indicating the inexhaustible stores of history that lie dormant on an Ordnance Map (particularly the 6-inch), ready to wake to life at the touch of a lively but informed imagination.

The first chapter is devoted to Old Maps of England, and the author, with true insight into primitive mentality, rightly says that we may ' take it for granted that the idea of a map existed in this country for many centuries before the coming of the Romans '. The idea of a map (and even ephemeral sand-drawn or other scratched sketch-plans) exists wherever there exist also people familiar with a bit of country; and the prehistoric builders of Stonehenge and Avebury with their avenues, to say nothing of the later defences of the Verulamium district, must have drawn many such. More familiar ground is traversed in describing the maps from Ptolemy to Saxton and Cary; but we miss the anonymous author of the Peutinger Tables—the nearest approach to a contemporary map of Roman Britain.

The Ordnance Survey has, as it deserves, a couple of chapters to itself. Then comes one on ' How to read a map, and some other matters ', from the first part of which ' accomplished and well-informed people are warned off ' ! (We once however, met one such who believed us when we told him, in a moment of temptation, that certain parallel lines on a hill-slope were contour-lines revealed by the magic of air-photography). The ' other matters ' include a statement which deserves the widest publicity, that ' it is impossible thoroughly to study the surface-forms, the soils or the archaeology of a district, without paying attention to its geology '.

The chapter on Place-names is based on the authoritative work of specialists and is refreshingly sane, as one would expect from the President of the English Place-name Society.

Prehistoric England has a chapter to itself, specially to be commended to those enthusiasts who may be thinking of writing long letters to experts ; they will find many of their difficulties solved here. Sir Charles quotes, and improves, ' Thurnam's dictum ' about long and round barrows on p. 90 (' *Long* barrows were made a *long* time ago, that

is they are older than the round barrows, and they are the resting-places of *long*-headed chiefs ' ; we would however, suggest ' people ', for the graves are communal).

The author professes a ' half instinctive repugnance to the Roman period ' ; but he has successfully disguised it, and his remarks on Roman roads are full of practical wisdom. It is good to find the element of conscious, deliberate planning of a road-system brought out, and to be told that the Roman engineer ignored existing trackways, as he undoubtedly did. How much rubbish has been written in the contrary belief can be appreciated only by the unwilling recipients of it.

The two concluding chapters deal with Saxon and Elizabethan and with seventeenth century England respectively. The Battles of Cheriton and Marston Moor are described with reference to the 6-inch maps, where their development can still be followed. The last pages lead up to a quotation from Bunyan's *Pilgrim's Progress* that may be commended to the Publicity Department of the Ordnance Survey.

An admirable feature of the book is the list of books, maps and articles at the end of each chapter—not citations of cheap hackneyed stuff but of the work of real first-hand students. Every reader of ANTIQUITY should buy this book, if it is not already out of print. O.G.S.C.

THE ARCHAEOLOGY OF CORNWALL AND SCILLY. *By* H. O'NEILL HENCKEN, PH.D., F.S.A.SCOT. Assistant Curator of European Archaeology, Harvard University. County Archaeologies: General Editor, T. D. Kendrick. *Methuen*, 1932. *pp.* XVIII, 340, *with* 9 *maps and* 59 *illustrations*. 10*s* 6*d*.

The volume on Cornwall possesses one initial advantage that is denied to others of this series. By its geographical position, and circumstances largely due to that position, the county forms an entity in a sense that no other English county does. It can, therefore, be more logically dealt with as a separate archaeological region than counties whose boundaries have no meaning in relation to conditions in prehistoric times. In the performance of his congenial task Mr Hencken has fully grasped the opportunities this offered to him. The book should appeal not only to those interested in Cornish antiquities, but to all those concerned with the study of British archaeology. The illustrations and maps are a distinct improvement on those of some of the previous volumes of this series.

With the necessary modifications the plan of the book follows that of its fellows. The Palaeolithic period, almost unrepresented in Cornwall, is dealt with in a single page, thus leaving more space for the consideration of ' Great Stone Monuments ', of paramount importance in the region. These include chambered tombs, circles, and standing stones. As in Brittany the megalithic remains of the Isles of Scilly seem out of all proportion to the size and fertility of the land ; what the author justly describes as the ' amazing number ' of chambered tombs (there are still 43 in the Isles) gives rise to a cautious speculation as to the possible reasons for it. It is recognized that some, if not all the chambered barrows of the Isles, as well as of the mainland, were made by people acquainted with metal, a piece of bronze or copper having been found in an undisturbed chamber on one of the islands, and whetstones, indicative of the use of metal, in two instances on the mainland. The statement that all British megalithic tombs were originally covered by mounds is perhaps a little too sweeping.

The bluish green segmented beads, for which an Egyptian or Cretan origin has been claimed, have been found in several burials in Cornwall. While claiming that the presence of these beads PROVE trading with the eastern Mediterranean in the Bronze Age, the author says that some were probably made locally. In view of the fact that this

is one of the simplest forms of bead to make, and turns up in many widely separated regions and dates, and that no other objects from the same foreign source are known in Britain, is it not at least probable that all these beads are of local origin, as seems to have been the case with similar beads found in Scotland ?

Perhaps the most interesting chapter in the book is that on the prehistoric tin trade. It should dispel once and for all the myth of Phoenician trade with this country.

The volume includes an ' Archaeological Gazetteer ' for the county, and lists of collections and museums in which Cornish objects may be found, of megalithic monuments, and of bishops of Cornwall. There is a good index. M. E. CUNNINGTON.

REPORT ON EXCAVATIONS AT JEMDET–NASR, IRAQ. *By* E. MACKAY, *with preface by* STEPHEN LANGDON. Field Museum of Natural History, Anthropology Memoirs, vol. I, no. 3. *Field Museum of Natural History, Chicago*, 1931. *pp.* 75 *and* 18 *plates. Price not stated.*

Jemdet–Nasr lies about 15 miles northeast of Kish (Tell Uhaimir), which in turn is 8 miles from Babylon. This means that we are in the heart of Babylonia, called in ancient times the Land of Akkad. The site of Jemdet-Nasr was deserted at a remote period, well before the beginning of the historic period beginning about 3100 B.C. ; consequently all that is found there bears the marks of a homogeneous civilization datable to about 3500 B.C. Amongst the ruins of a large building of thin flat bricks (whose exact nature remains undetermined), the expedition found inscribed tablets ; these will form the subject of another monograph by Dr Langdon. The signs on them were still almost pictographic, that is to say, they resemble the objects they are meant to represent, and have not yet acquired a cuneiform appearance. With these tablets were found many pot-fragments of two kinds ;—those which are unpainted have the form of jugs with obliquely set spouts or slightly curved like the spout of a tea-pot ; the others, shaped like flat water-pots, have high handles whose curve rises well above the vessel itself. The remainder are ' craters ' with small perforated lugs set round them for suspense. All these forms are recorded from other Mesopotamian sites, but only at the beginning of historical times. In addition to these unpainted vessels Mr Mackay found numerous painted ones, some with a single colour (black), some in several colours (black and two shades of red). The patterns are geometric, laid on in broad lines. They consist of animal and vegetable designs. The general appearance of this pottery is rather coarse, the commonest shapes being the saucepan or jar ; many specimens have perforated lugs like the unpainted ones. Jemdet-Nasr has yielded stone and metal implements and cylindrical envelopes for tablets of archaic character ; but no graves have been found as yet.

The polychrome painted pottery of Jemdet-Nasr is of a kind unique up to now in Mesopotamia (the monochrome pottery found at Eridu, Ur and many other places being older and quite different in character). It can only be compared with the pottery found in the mounds which occur round Musyan, about 95 miles west of Susa in Persia. This pottery is later than that from the deep strata at Susa, but is yet earlier than the beginning of history in Lower Mesopotamia, when painted pottery had ceased to exist. The great value of the excavation of Jemdet-Nasr, well conducted and well published, is that it states the problem of the relations then existing between the civilization of central Mesopotamia and that of ancient Persia. G. CONTENAU.*

* This, and the following review by M. Contenau, are translated by the EDITOR.

NEW LIGHT FROM ARMAGEDDON ; Second Provisional Report (1927–9) on the Excavations at Megiddo in Palestine. *By* P. L. O. Guy. [Oriental Inst. of Chicago, Communications, no. 9]. *Univ. of Chicago Press. pp.* 68, *and* 61 *illus.* 1 dollar.

Armageddon is a corruption of Har Mageddon, the hill of battles. The modern form is Megiddo and here are the excavations being directed by Mr Guy, whose second preliminary report, covering the campaigns of 1927–9, lies before us. The site of Megiddo* is a hill, today called Tell-el-Mutesellim, rising abruptly from the plain of Esdraelon ; its position has given it strategic importance in all periods. The excavations have reached the archaeological stratum described as IV, and have brought to light both tombs of the Middle Bronze Age and architectural remains of the old town ; in particular the town gate, which though simpler in plan closely resembles the south gate of Carchemish on the Euphrates, and is a good example of the great differences between Syrian and Assyrian gates, the latter amassing even more means of defence than the former. The street paving was laid bare, and the lower parts of certain houses, whose construction, in the case of important buildings, consisted of stones of unequal size, with pillars of dressed stone set at intervals, some having masons' marks like the famous Solomon's Seal. One of the most remarkable quarters of the town consists of great stables ; the horses were put in two rows divided by a central corridor ; the roof was supported by pillars which also served to mark off the space allotted to each animal. These stables could contain a large number of horses (120 under a single roof) ; they give one an idea of the importance of war-chariots at the period in question (about 1000 B.C.). Palestinian sites are usually rather poor in objects ; we must be grateful to Mr Guy for carrying out his investigations in such a way as to provide a correct interpretation of these Megiddo buildings, whose analogues, frequently met with in Palestine, had never been satisfactorily explained. The scarab, described by Mr Staples, has a winged Egyptian griffin and a *crux ansata*, which shows Egyptian influence ; but it also has a grasshopper, suggesting Mesopotamia. The griffin was used by artists everywhere in the Near East, but its prototype occurred already on the Egyptian palettes (Hieraconpolis). Mr Staples cites many passages where Egyptians, Assyrians and Hebrews compare their enemies to grasshoppers, thus using this insect as a symbol for a multitude. We know besides that the grasshopper is the emblem of a Mesopotamian deity ; on an enamelled brick from Assur it figures beside the god amongst the symbols of divinity surrounding it. Perhaps one should simply regard the ornament of this scarab as a reflection of the different influences which prevailed in Palestine during the first half of the first millennium before our era.

G. Contenau.

* An air-photograph of Megiddo is reproduced on plate XVI, facing p. 465.—Editor.

# Index


Åberg, N., *on* Chronology of the Bronze Age, 206–12
Acca, cross (*illus.*), 37–42
Achaemenid kings, 98
Acherrae, 21
Acheulean culture, 186, 189, 190, 191
Achthamar, church (*illus.*), 282, 283
Acropolis (The), 373–4
Aegean cultures, 199
Aezani, excavations, 220, 221
Agriculture, ancient (*illus.*), 327–37, 406
Air-photographs :—
  Mediterranean sea, 440
  Roman site, Cumberland, 467 (pl. IX, 472)
  Wansdyke, 349
Alberobello, trulli (*illus.*), 407–10
Alishar, 210, 238
Allen, J. Romilly, 161
al'Ubaid, copper age settlement, 199
America, Norse remains (*illus.*), 420–33
Anatolia, 237–9
Ancient Monuments Act, India, 478
Ancyra, excavations, 220
ANDERSON, A. O. ; Nennius's chronological chapter, 82–4
Apollo temple, Didyma, 218
Apulia, bee-hive dwellings (*illus.*), 407–10
Archaeology :—
  Archaeological queries, 338–40
  Bibliography, 260
  Field, 55–9, 361
  Institute of, proposed, 2–4
  Liverpool Institute, 2
  Photography and (*illus.*), 148–55, 387–8
  Teaching of, 1–4
  Wales, 230
Arctic culture, 194, 195
Aristeides, ostracism of, 481
Arkansas River Valley, 231
Armenia, monuments (*illus.*), 463–6
  Rock-engravings, 480
Armstrong, E. C. R., 159
Art, Celtic (*illus.*), 292–300
  Institute of, 2
Arthur, British king, 459–63
Asturian culture, 194
Atérian culture (*map*), 191
Auckland, cross-shaft (*illus.*), 41–2
Audi (Aurignacian) stage, 192
Augustine (Saint), 215, 216
Aunjetitz culture, 210, 212
Aurignacian culture, 186, 192 (*map*), 193, 194, 248
  Man, 195
Axe, bronze socketed, Shetland, 86
  Copper, 223
Axes, palaeolithic (*illus.*), 216–17
Azilian culture, 194
Baalbek, 484
Baldock, settlement, 480
Balks, in field-systems, 394, 396, 397
Balloon photography (*illus.*), 148–55
Baluchistan, civilization in, 504–7
BARK, L. G. ; Bee-hive dwellings of Apulia (*illus.*), 407–10
Barrows in Holland, 249–53
Bath, 'boat-stall', 95
Beaker culture, 243–4
  Settlement sites, 91, 245
  Invasion of Britain, 90–3
  Ware, 200, 231, 243–4
Bee-hive dwellings (*illus.*), 407–10
Beisan, 121–3
Bell, Gertrude, memorial, 361
Bere forest, 95
Bergin, O. J., 158
Berlin, museums (*illus.*), 60–3
Bewcastle cross (*illus.*), 35, 37, 44, 46, 48, 49, 51
BIRLEY, R. ; Battle of Mount Badon, 459–63
Bloxham, Romano-British settlement, 359
Boghaz Keui, excavations, 221
Bokerly Dyke, 461–2
Bourton on the Water, hut-site, 95
Bowls :—
    Distribution map, 180, 297
    Hanging (*illus.*), 161–84, 292, 293
  Barlaston (*illus.*), 163, 168, 173–4
  Barrington, 172, 175
  Basingstoke, 166, 167
  Benty Grange (*illus.*), 178
  Caistor (*illus.*), 166, 167
  Chessel Down (*illus.*), 163, 164, 166
  Chesterton on Fosseway, 176, 182
  Dover (*illus.*), 169, 170
  Faversham (*illus.*), 163, 167, 168, 170, 171, 172, 178

Bowls, *continued*:—
Finningley (*illus.*), 163, 165
Grind Low, 163
Halker, 162
Hawnby (*illus.*), 163, 164, 166
Hoprekstad (*illus.*), 167
Irchester (*illus.*), 162, 163, 173
Keythorpe, 173
Kingadle, 162
Kingston, 173, 174, 182, 183
Lowbury (*illus.*), 172, 175, 183
Lower Shorne, 163
Lullingstone (*illus.*), 168, 169, 171, 172, 173
Mildenhall, 169, 171
Needham Market, 167
Northumberland (*illus.*), 168, 175
Oslo museum (*illus.*), 166
Skomrok (*illus.*), 166
Sleaford (*illus.*), 163, 165, 168
Sturmere, 163
Ulstein, 166
Utne (*illus.*), 175
Wilton, 168, 182
Winchester (*illus.*), 176, 177, 178, 182
Wotton (Surrey), 163
York (*illus.*), 166, 167
Braughing cup (*illus.*), 170
Bricks, Verulamium (*illus.*), 140
Britain, chronology, 82–4
British Columbia, kitchen-middens, 231
Bronze Age, 187, 196–7
Burial, Egtved, 94
Chronology, 206–12
Escutcheon (*illus.*), 293, 300
Triskele (*illus.*), 300
Brooch, Kingston, 183
Silver, 183
Trumpet (*illus.*), 174, 294, 298
Bryn Celli Ddu, 230, 450, 457
Pattern stone (*illus.*), 445–6, 457
Brythons, 156–60
'Buddha' bucket (*illus.*), 167
Bühl, glacial stage, 188, 247
Buluwayo museum, 478
Burial customs, Baluchistan, 506
Site, Bloxham, 359
Stone Age ritual, 213–14
Burkitt, M.; Chronological table of Pre-history, 185–205
Bushman art, 254
Butrinto, excavations, 227
Buxton, L. H. D.; Plettenberg skull, 86–7
Caere, 12
Cairo museum, 227
Camerton, cemetery, 182
Campignian culture, 194
Capsian industries, 193, 194
Capua, trade centre, 22
Carlisle, cross, 48
Carrington, R. C.; The Etruscans and Pompeii (*illus.*), 5–23
Carthage, harbours, 222
Casey, D. A., 134
Catapult, invention of, 269
Celtic art (*illus.*), 177–9, 292–300
Farm-pond, 227
Field-system, 392–3
Mirrors (*distribution map*), 295, 296
Village, Chysauster, 98
Cemeteries, Levkas, 208
Centaurs, 105
Cerdics ford, battle, 461
Cerdicsleah, battle, 461
Cerne Abbas, giant, 214–16
Chair of Art and Archaeology, Near East, 482
Châtelperron (Aurignacian) stage, 192
Chellean cultures, 189
Chester, Roman amphitheatre, 227
Childe, V. Gordon, 156
Chronological table of Pre-history, 185–205
Chronology of Prehistoric Europe, 206–12
Neolithic pottery, 89–90
Chou Kou Tien, 97, 507–9
Chronology, Bronze Age, Europe, 206–12
of Nennius, 82–4
Prehistory, 130, 185–205, 483
Churches, fortified (*illus.*), 301–26, 466
Hira (*plans*), 279–81
Chwalibogowician culture, 194
Chysauster, Celtic village, 98
Cissbury camp, 390
Cists, 200, 201

Clactonian culture, 189, 190
CLARK, J. G. D.; Beaker invasion of Britain, 91–3
Clay, R. C. C., 327
Collingham, cross, 51
COLLINGWOOD, R. G.; Two Greek fortresses in Sicily (*illus.*), 261–75
COLLINGWOOD, W. G.; A pedigree of Anglian crosses (*illus.*), 35–54
Cologne, band-keramik village, 225
Comb-ware, 195
Combe-Capelle industries, 191; race, 192
Communal burial, 213–14
Congress of prehistoric archaeology, 132
Constantinople, excavations, 221
Copper Age, 196–7, 199, 210
Córdoba, rock-paintings, 364–6
Cornwall, archaeology, 510
Coup-de-poing industries, 194
Covered ways, 28
Cowen, J. D., 161, 162
Crannog, Viking, 482
CRAWFORD, O. G. S., 134, 157, 158
  Communal burial, 213–14
  General Pitt-Rivers' section of Wansdyke (*illus.*), 349–50
  Museums old and new (*illus.*), 60–70
  Palaeolithic axes from Transjordan (*illus.*), 216–17
Creswell industries, 193, 194
Crete, Minoan scripts, 368–9
Croft, cross, 48, 49
Crofton, cross, 51
Cro-Magnon race, 192
Cross-dykes (*illus.*), 24–34
Crosses, Anglian (*illus.*), 35–54
  Dating of, 35–54
  Durham school, 53
  Etchmiadzin, Armenia (*illus.*), 464
  Hexham school, 39–41
  Hira (*illus.*), 282
  Hoddam school (*illus.*), 44–8, 51, 53
  Lancaster school, 53
  Ripon school, 48–51
  Yorkshire school, 53
Cultivations, ancient (*illus.*), 389–406
Cultures, chronology, 185–205
  Distribution maps, 189, 191, 192, 193
Cumae, 19, 20, 21
  Coins issued, 19, 20
  Grotto of the Sibyl, 483
Cumberland, Roman site (*illus.*), 466–9
Cundall, cross, 50, 51
Cuneiform stele, Zwarthnotz (*illus.*), 465
CUNNINGTON, M. E.; Yarnbury castle (*illus.*), 471–4
Curwen, Eliot, 24
Curwen, E. Cecil, 25, 327
  Ancient Cultivations (*illus.*), 389–406
Cycladic culture, 199
Dacre, 50
Damgan, excavations, 482
  Stucco-work, 290
Danubian II period, 211
Daunians, 11, 12
Davis, A. W., 98
Decius, consul, 84
Decoration at Hira (*illus.*), 286, 287, 289, 290
DEEDES, C. N.; The Lion and the Unicorn, 341–2
Delos, 113–14
Dendra, royal tombs, 367–8
Denmark, prehistoric fields, 393–4, 396–8
Dewsbury, cross, 37
Diffusion of culture, 185–201
Dionysius, 268, 269, 274, 275
Distribution-maps :—
  Acheulean culture, 189
  Atérian culture, 191
  Aurignacian culture, 192
  Celtic mirrors, 296
  Chellean culture, 189
  Enamelled bowls, 180, 297
  Flake-industries, 189
  Magdalenian culture, 193
  Mousterian culture, 191
  Solutrean culture, 193
Dogs (*illus.*), 411–19
Dolmens, 200–1
Donovan, Miss, 95
Dordogne, rock-shelter, 190
Dunning, G. C., 95
Durham, cross, 40
  Sculptured slab, 37
Dwelling-place culture, 195

Earthworks :—
Cross-dykes, 24–34
Hembury fort (*illus.*), 475–7
Verulamium (*plans*), 134–5
Wansdyke (*air-ph.*), 348–9
Yarnbury castle (*illus.*), 471–4
Easby, cross, 44
Edinburgh League of Prehistorians, 223
Editorial notes, 1, 129, 257, 385
Egtved, Bronze Age burial, 94
Egypt, cultures, 199
Ekwall, Eilert, 158, 159, 160
Elementeitan culture, 248
Enamel-work, Celtic, 179, 181, 295–7
Eolithic period, 188
Ephesus, excavations, 219–20
Epic of Gilgamesh, 341–2
Ertebølle culture, 194
Escutcheons on bowls (*illus.*), 166–79, 182, 293, 295, 300
Eshnunna, 227
Etchmiadzin, Armenia, cross (*illus.*), 464
Ecclesiastical buildings (*illus.*), 466
Etruria, coinage, 19–20
Etruscans and Pompeii (*illus.*), 5–23
Europe, cultures, 187
Prehistoric, 206–12
Euryalus (Syracuse), fortress (*illus.*), 261–70, 498
Eutresis, excavations, 383–4
Evans, Sir Arthur, 94
Excavations :—
Aezani, 220, 221
Ancyra, 220
Beisan, 121–2
Boghaz Keui, 221
Butrinto, 227
Chou Kou Tien, 97, 507–9
Constantinople, 221
Damgan, 482
Delos, 113–14
Ephesus, 219–20
Eutresis, 383–4
Fara, 502–4
Gaza, 477
Herculaneum, 97, 483
Hira (*illus.*), 98, 276–91
Holt, 111–12
Excavations, *continued*:—
Jemdet-Nasr, 511
Jerusalem, 98
Lydney Park, 488–90
Megiddo (*illus.*), 512
Merimde, 226
Mintarno, 223
Mossel Bay, 479
Mumrills, 112–13
Nineveh, 226
Nuzi, 229
Olynthus, 254–6
Paestum, 97
Pergamum, 219
Pompeii (*illus.*), 5–23
Salmonsbury, 95, 225
Shetland (*plan*), 84–6
Tell Halaf, 246–7
Tepe Gawra, 229
Tipaza, 481–2
Turkey, 218–21
Verulamium, 98, 482
Wady el Mughara, 229
Exeter, excavations proposed, 222
Falstone, cross, 41
Fara, excavations, 502–4
Felix, consul, 83
Fenland, study of, 481
Fenser, coinage, 18, 19
Field archaeology, 55–9, 361
System, Celtic, 392–3 ; Jutland, 393–4, 396, 398
Fire, evidence of early use, 97, 507
Fire-bar, Verulamium (*illus.*), 140
Flake industries, 190
Flint dagger, Bronze Age, 231
Implements, Kharga, 478; Palestine, 228; Sturge collection, 230
Industry, Tahunian, 229
Mines, Winterslow, 245
Flood (The), 198, 199
Font Robert (Aurignacian), stage, 192
Fortifications, Pompeii (*illus.*), 6–7
Sicily (*illus.*), 261–75
Fossil man, chronology, 194–5
France, lynchets (*illus.*), 398–401
Frankfort, H., 227, 356
Frescoes at Malmkrog (*illus.*), 320

Funerary remains, Nubia, 97
Gamblian pluvial, 247, 248
Garrod, D. A. E., 225, 360
Garstang, John, 98
GATHORNE-HARDY, G. M.; Alleged Norse remains in America (*illus.*), 420–33
Gaza, excavations, 477
Germanus, visit to Britain, 83, 84
Gerzean, copper age, 199
Getulian industries, 193
Ghassulian culture, 229
Glacial age, 186, 188
Glastonbury, crosses, 37
Goidels, 156–60
Gold ornaments, Towednack, 96
Goldberg, hill-fort, 100
Gordon, H. S., 134
Graham, James, 350
Gravette (Aurignacian) stage, 192
Greece, cultures, 199
GRENIER, A.; 'Roman Gaul', 126–7
Grimaldi industries, 193, 194
  Race, 192
Gumban industry, 248, 249
Gunz, glacial age, 188
Günz-Mindel, glacial stage, 247
GUY, P. L. O.; Balloon photography and archaeological excavation (*illus.*), 148–55
Hackness, cross (*illus.*), 37, 51, 52
Halker, bronze vessels, 162
Hallstatt culture, 197–8
Halton, cross, 53
Hammurabi, king of Babylon, 198
Harold, Saxon king, 95
Harold's Hall, 95
Harpoon, Kunda type (*illus.*), 218
Harrow (agriculture), 333, 334
Heavenfield, wooden cross, 36
Helis, name of, 214
Helith, giant of Cerne, 215–16
Helladic culture, 199
  Pottery, 207, 208, 384
Hembury fort (*illus.*), 475–7
Hemp, W. J., 445, 446, 450
Herculaneum, excavations, 97, 483
  Greek plan, 16
Hermocrates, defender of Selinus, 273, 274
Heversham, cross, 40
Hexham, sculptured slab, 37
Heysham, cross, 40, 44, 48
HILZHEIMER, MAX; Dogs (*illus.*), 411–19
Himilco, 269
Hira, churches (*plans*), 279–81
  Excavations (*illus.*), 98, 276–91
  Foundation of, 276
Hissarlik, 72–81
Historical Research, Institute of, 2
Hoare, Sir R. C., 28
Hoddam, crosses (*illus.*), 44–6
Holland, barrows in, 249–53
  Marsh-dwellings, 100
Holt, excavations, 111–12
Holtye, Roman road (*illus.*), 353
*Homo sapiens*, 88, 89, 191
Horn, prehistoric (*illus.*), 474
Hornby, cross, 48
Horse, domesticated, 195
  Introduction into Egypt, 226
Huddersfield, regional survey, 228
Human remains:—
  Mossel Bay, 479
  Mount Carmel, Palestine, 360
  Ngandong, Java, 360
  Oldoway, 95, 224, 249
  Plettenberg skull, 86–7
  South Africa, 224
  Tilemsi, Sahara, 358
Hungary, Bronze Age sites, 208
HUNTINGFORD, G. W. B.; Ancient Agriculture (*illus.*), 327–37
Hut-village, Salmonsbury, 95, 225
Hyria, coinage, 18, 19
Ice ages, 188
Implements, bronze, Donhead St. Mary, 240–1
  Chou Kou Tien, 97, 507–9
  Tardenoisian, Holland, 364
Indus civilization, 257–9, 356–7
Industries, prehistory cultures, 189–200
Ingoldmells Point, Roman site, 345, 347, 348
Inscriptions, Achaemenid kings, 98
  Sinai, 375
Iona, wooden cross, 36
Iraq, British School of Archaeology, 361
Irchester, bronze vessels, 162, 163

Iron Age, 197, 198
Ironworks, Sussex, 105–8
Israelities in Sinai (*illus.*), 116–17, 434–44
Italy, trade-routes, 18–22
Ivories, Samaria, 360
JARVIS, C. S.; The Israelites in Sinai (*illus.*), 434–44
Jemdet Nasr culture, 198
  Excavations, 511
JENKINS, J. E.; Sturgeon, 93
Jerusalem, excavations, 98
  Walls, 123
Jutland, prehistoric fields, 393–4, 396–8
Kamasian pluvial, 248
Kelts in Britain, 156–60
Kendal, cross, 40, 50
Kendrick, T. D., 292
  British hanging-bowls (*illus.*), 161–84
Kensington Stone (*illus.*), 420–33
Kenya Colony, Stone Age cultures, 247–9
Kharga, flint implements, 478
  Oasis, 484
Kingadle hoard, 162
Kingston, Saxon cemetery, 182, 183
Kirkby Hill, cross, 48
Kirkley, inscribed tomb-stone, 96
Kish, 198, 210, 380
Kitchen Midden culture, 194
KNIGHT, W. F. J.; Maze symbolism and the Trojan Game (*illus.*), 445–58
Kunda culture, 194
Lake-dwelling, Ballinderry, 482
  Dwellings, Neuchâtel, 360
LAMB, W.; The Site of Troy (*illus.*), 71–81
Lancaster, cross, 40
La Tène culture, 198
  Bowls, 163, 173–5
Laus, 18, 19, 21
Leeds, E. T., 184, 462
Lesbos, 77
Levalloisean culture, 189, 190
Levkas, cemeteries, 208
LIDDELL, DOROTHY M.; The palisade at Hembury fort (*illus.*), 475–7
Lincolnshire, post-glacial deposits, 346
  Roman sites, 344–8
Lion and the Unicorn, 341–2
Liverpool museum guides, 103
London University, 2–4
Loom-weight (*illus.*), 140
Los Millares, 211, 212
Loth, M. J., 159
Louvre, The, 64–6
Lydd, 230
Lydney Park, excavations, 488–90
Lynchets (*illus.*), 334–5, 389–91, 395, 398–404
Macalister, R. A. S., 159
MacCown, Theodore, 360
MACKAY, E.; An important link between Ancient India and Elam (*illus.*), 356–7
MacNeill, Eoin, 158
Magdalenian culture (*map*), 186, 193
  Man, 195
Maglemosean culture, 194
Magosian industry, 248
Maiuri, Professor, 6, 97, 483
Man :—
  Antiquity, 87–9
  Chronology of fossil, 194–5
  Fossil remains, Asselar, 480
  *Homo sapiens*, 88, 89, 191
  Oldoway, 95, 224, 249
  *Palaeanthropus Palestinus*, 360
  *Pithecanthropus*, 87, 485
  *Sinanthropus*, 507–9
  *See also* HUMAN REMAINS
Maps :—
  Anatolia, settlement-sites, 78
  Chinese Empire, 119
  Distribution maps, *see* DISTRIBUTION
  Italy, trade connexions, 11
  Prae Wood, Verulamium, 134
  Prehistoric settlement, Verulamium, 138
  Roman Empire, 120
  Roman roads, etc., Lincolnshire, 343
    London to Sussex, 351
  Sinai, 437
  Transylvania, 302, 312
  Troad, 74
  Verulamium, 135
  *See also* PLANS
Maps of England, 509
MARGARY, I. D.; Roman road from London to Sussex (*illus.*), 350–6
Marshall, Sir John, 257, 258, 259

Masham, cross, 50, 51
Mauceri, Luigi, 261
Maximus, British ruler, 83
Maya, 115–16
Mayer, L. A., 482
Maze symbolism, 445–58
Mazes, turf-cut, 458
Mediterranean region, geography, 494–6
Megalithic tombs, 187, 200–1, 213
Megiddo, 154, 155, 512, (*illus.* p. 472)
Melsonby, grave-slabs, 50
Menes, king of Egypt, 199
Merimde, Neolithic settlement, 226
Mesolithic industries, 248
  Man, 195
  Period, 194
Mesopotamia, cultures, 198–9
Mesvinian industries, 190
Michigan, aboriginal population, 498–9
  Archaeological atlas, 231
Micoque (la), Acheulean stage, 190
Middle Aurignacian stage, 192
Mindel, glacial stage, 188, 483
Mindel-Riss, glacial stage, 186
Minoan culture, 199
  Scripts, 368–9
Minos, king of Knossos, 199
Mintarno, excavations, 223
Minyan ware, 207, 208
Mirrors, Celtic (*distribution map*), 295, 296
Mitchell, M.; Beaker invasion of Britain, 90–1
Mohenjo-daro, 257–9
  Steatite vase (*illus.*), 357
Mossel Bay, excavations, 479
Mount Badon, battle, 459–63
Mount Carmel, human remains, 360
Mousterian culture (*map*), 186, 190–1, 248
  Man, 194
Mumrills, Roman fort, 112–13
Mural paintings, Hira, 280, 281
Museums (*illus.*), 60–70
Mycenae, tombs, 235–6, 367
Mycenaean culture, 199
Nanyukian culture, 248
Naples, coinage, 22
  Trade centre, 22
Natufian industries, 194, 229
Neanderthal race, 191
Neanthropic man, 192
Nennius, chronology, 82–4
Neolithic period, 195–6
  Pottery, 89–90
  Settlement, Merimde, 226
  Wessex, 361, 492
Nicosia, 13th cent. church (*illus.*), 469–71
Nineveh, excavations, 226
Ninth Legion, 339
Njoran industry, 249
Nola, 11, 19, 21, 22
Nordic culture, 374–5
Norse remains, America (*illus.*), 420–33
Northallerton, cross (*illus.*), 48, 50
Nøstvet culture, 194
Notes and news, 82, 213, 338, 459
Nubia, tumuli, 97
Nuceria, 11, 21, 22
Nunnykirk, cross, 41
Nuzi, excavations, 229
Offa's Dyke, 244
Old Keith, excavations, 481
Oldoway man, 95, 224, 249
Olynthus, excavations, 254
Opisthodomos, Greek treasury, 111, 222
Orkney, prehistoric remains, 104–5, 231
Oscans, 7, 8, 12, 16
*Ostraka*-sherds, 481
Otley, cross (*illus.*), 43–4, 48, 53
Paestum, excavations, 97
*Palaeanthropus Palestinus*, 360
Palaeolithic axes (*illus.*), 216–17
  Cultures, 186
  Periods: lower, 189–90; middle, 190–1; upper, 191–3
  Tools, 369–70
Palestine Art-Collections Society, 359
  Flint implements, 228
  Mesolithic industries, 194
  Prehistory cultures, 229
Palisades of prehistoric towns, 137, 475–7
Parsons, F. G., 157
Passage graves, 200, 201, 211, 212
Paulinus, consul, 84
Peake, H. J. E., 157
Peate, I. C.; Kelts in Britain, 156–60
Peddar's Way, 342, 344

Pelasgians, 12
Percival, S. T., 474
Pergamon museum, Berlin (*illus.*), 60–3
Pergamum, excavations, 219
Persia, inscriptions, 98
Peru, discoveries in, 479
Peterborough ware, 89, 90
Petrie medal, awards, 94
Petrie, Sir Flinders, 215
PHILLIPS, C. W.; Roman ferry across the Wash (*map*), 342–8
Photography, balloon (*illus.*), 148–55
Phylakopi, 207
Pictish settlement, Skara Brae, 104–5
PIGGOTT, STUART; Name of the Giant of Cerne, 214–16
*Pithecanthropus*, 87, 485
Place-names, Scotland, 242
Plans :—
  Building at Hira, 285, 286
  Chambers in Shetland, 85
  Churches at Hira, 280, 281
  Cissbury camp, 391
  Cross-dykes, 26, 29, 31, 32
  Fort at Hembury, 476
  Fortified churches, 306, 310, 324
  Fortresses in Sicily, 263, 271
  Lynchets, Thundersbarrow Hill, 395
  Pergamon museum, Berlin, 62
  Pompeii, street-plan, 10
  Thundersbarrow Hill, 391
Plaster-work, Hira (*illus.*), 282–3
Pleistocene succession, England, 228
Plettenberg skull, 86–7
Plough, ancient forms (*illus.*), 327–33
Pompeii (*illus.*), 5–23
  Temple, 16
  Walls (*illus.*), 12–17
Populonia, 20
Posidonia, coins issued, 18
  Trade centre, 19, 21
  Walls of (*illus.*), 13–15
Post holes (*illus.*), 472, 473, 477
Potters' stamps, index, 490
Pottery :—
  Alishar, 238
  Beaker, 200
  Beaker invasion of Britain, 90–3
Pottery, *continued* :—
  Decoration, 370–2
  Helladic, 207, 208, 384
  Hira, 291
  Hissarlik, 81
  Mesopotamia, 198, 199
  Neolithic, 89–90
  Nineveh, 226
  Peterborough, 214
  Samarra, 239
  Stamps, 490
  Tardenoisian culture, 100
  Tell Halaf, 246
  Thermi (*illus.*), 81
  Verulamium (*illus.*), 142–7
  West Kennet, 214
  Yarnbury, 472
  Yorkshire Wolds, 486
Prae Wood, Verulamium (*illus.*), 134–47
Pre-Chellean culture, 186, 189
Prehistoric fields, Jutland, 393–4, 396–8
  Ovens, Verulamium (*illus.*), 139–40
  Settlement, Verulamium (*plan*), 134–47
  Site, Shetland (*plan*), 84–6
  Tools, Chou Kou Tien, 507–9
Prehistory, chronological table, 130, 185–205 483
  Chronology of Europe, 206–12
Pre-Mousterian Man, 194
Proto-Mousterian industries, 190, 191
Puteoli, 21
Rabel, Nabatean ruler, 359
Radiotellurie, use made of, 358
Recent articles, 99, 228, 484
  Events, 94, 222, 358, 478
Reck, Hans, 95
Reculver, cross (*illus.*), 36, 54
Reitlinger, Gerald, 98, 276
Reliquary, Monymusk (*illus.*), 179
Reviews, 104, 233, 362, 488 (*list* 522)
Rhŷs, Sir John, 156, 157, 158
RICE, D. TALBOT, 98
  Monuments of Armenia (*illus.*), 463–6
  Oxford excavations at Hira, 276–91
RICHMOND, I. A.; Archaeologist and the man in the street, 338–40
  'Roman Gaul', 127–8
Ripon, crosses, 48

Riss, glacial stage, 188
Riss-Würm, glacial stage, 186, 247
Roads, Kent, 230
Rock-cut tombs, 94, 201
  Engravings in Armenia, 480
  Markings, Traprain Law (*illus.*), 474–5
  Paintings, Córdoba, 364–6
Roknia, rock-cut tombs, 94
Roman :—
  Amphitheatre, Chester, 227
  Burial-site, Bloxham, 359
  Ferry across the Wash (*map*), 342–8
  Forts (*illus.*), 112–13, 466–9
  Gaul, 126–8
  Inscription, Chichester, 372, 483
  Inscriptions, 372
  Pigs of lead, 230
  Pottery, index of stamps, 490
  Quarries, 339
  Remains, Mintarno, 223
  Road, Holtye (*illus.*), 353
    London to Sussex (*illus.*), 350–6
    Thiefside Hill, 469
  Theatre, Butrinto, 227
  Tools, 339, 340
  Wall, 340
Rome, walls, 496–8
Romsey, prehistoric horn (*illus.*), 474
Rotation of crops, 336–7
Rubelius, consulate, 82
Rufus, consulate, 82
Runic inscription (*illus.*), 425–33
Ruthwell, cross (*illus.*), 44, 45–7, 51
RYLEY, CAROLINE ; Antiquity of Man, 87–9
Sackrau, finds, 164, 165, 166, 183
Sahara, reported palaeolithic remains, 358
St. Albans, *see* VERULAMIUM
Salian dance, 451–2, 455
Salmonsbury, excavations, 95, 225
Samarra, pottery, 239
Samian ware, stamps, 490
Samnites, 8
Saxon cemetery, Kingston, 182, 183
  Enamel-work, 181
  Grave, Lower Shorne, 163
  Hut-site, 95, 225
  Occupation of Britain, 299, 300
S'baïkian culture, 190
SCHEDE, M. ; Archaeological research in Turkey, 218–21
Schliemann, Heinrich, 108–9
Schram, O. K., 159
Scilly Islands, archaeology, 510
Scotland, place-names, 242
Scunthorpe (Lincolnshire), 378–9
Seals, Mohenjo-daro, 356, 357
  Tell Asmar, 227, 356–7
SEBASTIAN, E. G. ; German fortified churches in Transylvania (*illus.*), 301–26
Sébilian industries, 193
Selinus (Sicily), fortress (*illus.*), 270–5
Shaft-graves, Mycenae, 235
Shetland, prehistoric sites (*plan*), 84–6
Ships, sailing, 362–3
Shrine, Jebel Rumm, 359
Sicily, Greek fortresses (*illus.*), 261–75
Simonburn, cross, 41
Sinai, Israelites in (*illus.*), 116–17, 434–44
  Script, 375
*Sinanthropus*, 507–9
Skara Brae, 104–5, 231
Skull, fossil, South Africa, 224
  Ngandong, Java, 360
  Plettenberg, 86–7
Smith, G. Elliot, 97
  Reginald, 161
Solutrean culture (*map*), 185, 192–3
  Man, 195
Somerset, archaeology, 501–2
SPENCE, J. E. ; Roman site in Cumberland, 466–9
Spital, cross, 40
Stamfordham, cross, 40
Steatite vases (*illus.*), 357
Stein, Sir Aurel, 94, 259
Stilicho, consulate, 82
Stone Age cultures, 247–9
  Circle, Old Keith, 481
Straker, Ernest, 352
Strepyan industries, 189
Stucco-work, Hira (*illus.*), 286–90
Sturgeon in Anglo-Saxon times, 93
Sturmere, bowl, 163
Sumer, dating of graves, 210
Sumner, Heywood, 24
Susa, chronology, 357

Sussex, ironworking, 105–8
Swiderian culture, 194
Swinnerton, H. H., 346
Sword, flange-hilted, 376–7
Sybaris, 18, 19, 21
Syracuse, fortress of Euryalus (*illus.*), 261–70
Tacitus, 339
Tahunian flint industry, 229
Tardenoisian culture, 194, 363–4
Tasciovanus, coins of, 133
Tatham, E. H. R., 342
Taurus, consul, 83
TAYLOR, J. DU P.; Thirteenth century church at Nicosia (*illus.*), 469–71
Tell Asmar, seal found, 227, 356–7
Tell Halaf, 246–7
Tepe Gawra, excavations, 229
Terra sigillata, stamps, 490
Thermi (*illus.*), 77–81
Thessalians, 12
Tholos tombs, 201
Thundersbarrow Hill (*plan*), 390–2
Tipaza, excavations, 481–2
Tombs, Dendra, 367–8
  Megalithic, 200–1
  Rock-cut, 94, 201
Towednack, gold ornaments, 96
Transylvania, churches (*illus.*), 301–26
Traprain Law, dish (*illus.*), 164, 165
  Sculptured rock (*illus.*), 474–5
Trojan game, 445–58
Troy, chronology, 209–10
  Site of (*illus.*), 71–81
Trulli, in Apulia (*illus.*), 407–10
Turkey, archaeological research, 218–21
Umbrians, 11, 12
Unicorn, lion and the, 341–2
Ur, 198, 210
Uruk culture, 198, 485
Vainona, 346
Verulamium (*illus.*), 133–47
  Excavations, 98, 482
Vortigern, reign of, 83
Wady el Mughara, excavations, 229
Wainfleet, 346
Wallop, place-name, 83
Wansdyke (*air-ph.*), 349–50
Warka, 198, 485
Wash (The), Roman ferry (*map*), 342–8
Weald (The), ironworks, 105–8
Wessex, map of Neolithic, 361, 492
Wheat grains, Emst, 96
Wheeler, R. E. M., 94, 98, 156, 342, 488
  Paradox of Celtic art (*illus.*), 292–300
  Prehistoric Metropolis (*illus.*), 133–47
  This Fieldwork, 55–9
Wheeler, T. A., 488
Whitsbury camp, 463
WILLIAMS-FREEMAN, J. P.; Cross-dykes, 24-34
Winchester bowl (*illus.*), 176, 177, 178, 182
Windmill Hill ware, 89, 90
Wotton (Surrey) hoard, 163
Würm, glacial stage, 186, 188
Yarnbury castle (*illus.*), 471–4
York, crosses, 51
Yorkshire, early man, 233–5
Zwarthnotz, carvings (*illus.*), 465
  Cuneiform stele (*illus.*), 465

## REVIEWS AND SHORT NOTICES

PAGE

Åberg (N.) *Bronzezeitliche und Früheisenzeitliche Chronologie*, vol. 3 – – – 206
Allcroft (A. H.) *Waters of Arun* – – – – – – – – – – 381
*American Schools of Oriental Research : Bulletin* – – – – – – 486
*Archivo de prehistoria Levantina* – – – – – – – – – – 232
*Atti e memorie della Societa Magna Grecia* – – – – – – – 487
Bersu (G.) *and others. Der Breite Berg bei Striegau* – – – – – 382
Breuil (H.) *Le feu et l'industrie de pierre et d'os dans le gisement du 'Sinanthropus' à Chou Kou Tien* – – – – – – – – – – – 507
—— *Le feu et l'industrie lithique et osseuse à Chou Kou Tien* – – – – 507
Burn (A. R.) *Romans in Britain* – – – – – – – – – – 372
Burnell (F. S.) *Wanderings in Greece* – – – – – – – – – 366

# INDEX—REVIEWS


PAGE

Butter (J.) *Les Silex de Budel* – – – – – – – – – 363
Carpenter (R.) *Sculpture of the Nike Temple Parapet* – – – – – 109
Childe (V. G.) *Skara Brae* – – – – – – – – – – 104
Close (Sir C.) *The Map of England* – – – – – – – – 509
Clowes (G. S. Laird). *Sailing Ships* – – – – – – – – 362
Collingwood (R. G.) *Roman Britain* – – – – – – – – 372
Cook (A. B.) *Rise and progress of Classical Archaeology* – – – – – 101
Couch (H. N.) *Treasuries of the Greeks and Romans* – – – – – 110
Cunnington (M. E.) *The ' Sanctuary ' on Overton Hill* – – – – – 244
Dexter (T. F. G.) *Fire worship in Britain* – – – – – – – 232
Dobson (D. P.) *Archaeology of Somerset* – – – – – – – 501
Drennan (M. R.) *Physical Anthropology* – – – – – – – 241
Dudley (H. E.) *History and antiquities of the Scunthorpe and Frodingham District* 378
Dumézil (G.) *Le problème des Centaures* – – – – – – – 105
Elgee (F.) *Early man in North-east Yorkshire* – – – – – – 233
Field (H.) *Expedition to Kish* – – – – – – – – – 380
Fitzgerald (G. M.) *Beth-Shan Excavations*, 1921–23 – – – – – 121
—— *Four Canaanite Temples of Beth-Shan* – – – – – – – 121
Fox (C.) *and* D. W. Phillips. *Offa's Dyke* – – – – – – – 244
Gann (T.) *and* J. E. Thompson. *History of the Maya* – – – – – 115
Gardner (A.) *Medieval sculpture in France* – – – – – – – 375
Gardner (G. A.) *Rock-paintings of Northwest Córdoba* – – – – – 364
Geer (Sten de). *Subtropical belt of Old World Empires* – – – – – 118
Giffen (A. E. van). *Die Bauart der Einzelgräber* – – – – – – 249
Goldman (H.) *Excavations at Eutresis in Boeotia* – – – – – – 383
Grimes (W. F.) *Holt, Denbighshire* – – – – – – – – 111
Guy (P. L. O.) *New light from Armageddon* – – – – – – – 512
Hege (W.) *and* G. Rodenwaldt. *The Acropolis* – – – – – – 373
Heinrich (E.) *Fara* – – – – – – – – – – – 502
Hencken (H. O'N.) *Archaeology of Cornwall and Scilly* – – – – 510
Herig (F.) *and* G. Kraft. *Die Form der Paläolithischen Geräte* – – – 369
Herzfeld (E.) *Die Ausgrabungen von Samarra* – – – – – – 239
Hinsdale (W. B.) *Distribution of the Aboriginal Population of Michigan* – – 498
Hocart (A. M.) *Temple of the Tooth in Kandy* – – – – – – 240
Holand (H. R.) *The Kensington Stone* – – – – – – – – 420
Imbelloni (J.) *Die Arten der Künstlichen Schädeldeformation* – – – – 118
—— *Diffusion of Mere* – – – – – – – – – – 100
—— *El Toki Magico* – – – – – – – – – – – 99
Jarvis (C. S.) *Yesterday and today in Sinai* – – – – – – – 116
Karo (G.) *Schachtgräber von Mykenai* – – – – – – – – 235
*Kulturgeschichtliche wegweiser durch das Römisch-Germanische Zentral-Museum* – 383
Langdon (S.) *Excavations at Kish* – – – – – – – – – 380
Leakey (L. S. B.) *Stone Age cultures of Kenya Colony* – – – – – 247
Ludwig (E.) *Schliemann of Troy* – – – – – – – – – 108
Macdonald (Sir George) *and* A. O. Curle. *Roman fort at Mumrills* – – – 112
Mackay (E.) *Excavations at Jemdet Nasr* – – – – – – – 511
Mackenzie (W. C.) *Scottish Place-names* – – – – – – – – 242
Macurdy (G. H.) *Hellenistic Queens* – – – – – – – – 487
*Manchester Egyptian and Oriental Society : Journal* – – – – – – 485

PAGE

Moraes (G.) *Kadamba Kula* – – – – – – – – – 240
Morris (E. H.) *Temple of the Warriors* – – – – – – – 99
*Neolithic Wessex* – – – – – – – – – – – 492
*Nordisk Kultur* – – – – – – – – – – – 374
Obermaier (H.) *and* H. Kuhn. *Bushman art* – – – – – – 254
*Oceania* – – – – – – – – – – – – – 99
Olmstead (A. T.) *History of Palestine and Syria* – – – – – – 124
Oppeln-Bronikowski (F. von). *Archäologische Ent-deckungen im 20 jahrhundert* – 114
Oppenheim (M. von). *Der Tell Halaf* – – – – – – – 246
Oswald (F.) *Index of Potters' Stamps on Terra Sigillata, Samian Ware* – – 490
Passmore (A. D.). *Bronze implements from Donhead St. Mary* – – – – 240
Peake (H.) *and* H. J. Fleure. *Merchant Venturers in Bronze* – – – – 114
Persson (A. W.) *Royal tombs at Dendra* – – – – – – – 367
Pei (W. C.) *Quartz and other stone artifacts in the Lower Hominid-bearing sediments of the Choukoutien cave deposit* – – – – – – – 507
Petrie (Sir Flinders). *Seventy years in Archaeology* – – – – – 237
*Philadelphia Museum Journal* – – – – – – – – – 486
Plassart (A.) *Exploration archéologique de Délos* – – – – – – 113
*Préhistoire* – – – – – – – – – – – – 491
*Quarterly of the Department of Antiquities in Palestine* – – – – – 125
Randall-MacIver (D.) *Greek cities in Italy and Sicily* – – – – – 256
Robinson (D. M.) *Excavations at Olynthus* – – – – – – – 254–6
—— *Greek vases in the Royal Ontario Museum, Toronto* – – – – – 379
Rosenberg (G.) *Kulturstromungen in Europa zur Steinzeit* – – – – 370
Rowe (A.) *Topography and history of Beth-Shan* – – – – – – 121
Saeflund (G.) *Le Mura di Roma Repubblicana* – – – – – – 496
Schmidt (E.) *Anatolia through the Ages* – – – – – – – 237
Seaby (A. W.) *Art in the life of Mankind* – – – – – – – 377
Semple (E. C.) *Geography of the Mediterranean Region* – – – – – 494
Sprengling (M.) *The Alphabet* – – – – – – – – – 375
Sprockhoff (E.) *Germanischen Griffzungenschwerter* – – – – – 376
Stampfuss (R.) *Die Jungneolithischen Kulturen in Westdeutschland* – – – 243
Stawell (F. M.) *Clue to the Cretan scripts* – – – – – – – 368
Stein (Sir Aurel). *Archaeological tour in Gedrosia* – – – – – – 504
Stekelis (M.) *Prehistory in Palestine* – – – – – – – – 485
Stibbe (E. P.) *Physical Anthropology* – – – – – – – – 241
Stone (J. F. S.) *Flint Mines, Easton Down, Winterslow* – – – – – 245
—— *Settlement site, Beaker period, Easton Down* – – – – – – 245
Straker (E.) *Wealden Iron* – – – – – – – – – 105
Suhr (E. G.) *Sculptured portraits of Greek Statesmen* – – – – – 366
Sukenik (E. L.) *and* L. A. Mayer. *Third wall of Jerusalem* – – – – 121
Sumner (H.) *Local papers, Archaeological and Topographical* – – – – 499
Trachtenberg (O. V.) *and others. Text-book of History* – – – – – 500
Trumper (V. L.) *Mirror of Egypt in the Old Testament* – – – – – 116
Vielliard (R.) *Origines du Titre de Saint-Martin aux Monts à Rome* – – – 381
*Vorgeschichtliches Jahrbuch* – – – – – – – – – – 117
Watelin (L. C.) *Excavations at Kish* – – – – – – – – 380
Wheeler (R. E. M. *and* T. V.) *Report on the excavation of the Prehistoric, Roman, and post-Roman site in Lydney Park, Gloucestershire* – – – – – 488
*Wira Kocha* – – – – – – – – – – – – 100

# Antiquity

## A Quarterly Review of Archæology

*Edited by O. G. S. Crawford, F.S.A.*

MARCH 1932


| | Page |
|---|---|
| Editorial Notes | 1 |
| The Etruscans and Pompeii. By R. C. Carrington | 5 |
| Cross-Dykes. By J. P. Williams-Freeman | 24 |
| A Pedigree of Anglian Crosses. By W. G. Collingwood | 35 |
| This Fieldwork. By R. E. M. Wheeler | 55 |
| Museums Old and New: personal impressions. By O. G. S. Crawford | 60 |
| The Site of Troy. By Winifred Lamb | 71 |
| Notes and News :— | 82 |
| Nennius's Chronological Chapter, 82 ; Recent Discoveries in Shetland, 84 ; The Plettenberg Skull, 86 ; The Antiquity of Man, 87 ; Neolithic Pottery, 89 ; The Beaker Invasion of Britain, 90 ; Sturgeon in Anglo-Saxon times, 93. | |
| Recent Events | 94 |
| Some Recent Articles | 99 |
| Reviews (*for list see next page*) | 104 |


*Editorial Notices, see page 2 of cover*

## REVIEWS


Page

*Skara Brae.* *By* V. Gordon Childe – – – – – – – – – 104

*Le problème des Centaures.* *By* Georges Dumézil – – – – – – – – 105

*Wealden Iron.* *By* Ernest Straker – – – – – – – – – 105

*Schliemann of Troy.* *By* Emil Ludwig – – – – – – – – 108

*The Sculpture of the Nike Temple Parapet.* *By* Rhys Carpenter – – – – 109

*The Treasuries of the Greeks and Romans.* *By* H. N. Couch – – – – – 110

*Holt, Denbighshire.* *By* W. F. Grimes – – – – – – – – 111

*The Roman Fort at Mumrills near Falkirk.* *By* Sir George Macdonald *and* Alexander O. Curle – – – – – – – – – – – – – – 112

*Exploration archéologique de Délos.* *By* André Plassart – – – – – – 113

*Archäologische Entdeckungen im 20 Jahrhundert.* *By* F. von Oppeln-Bronikowski – 114

*Merchant Venturers in Bronze.* *By* Harold Peake *and* H. J. Fleure – – – – 114

*History of the Maya.* *By* Thomas Gann *and* J. Eric Thompson – – – – 115

*The Mirror of Egypt in the Old Testament.* *By* Victor L. Trumper – – – – 116

*Yesterday and Today in Sinai.* *By* C. S. Jarvis – – – – – – – 116

*Vorgeschichtliches Jahrbuch : bibliographie des Jahres* 1927 – – – – – 117

*Die Arten der Künstlichen Schädeldeformation.* *By* J. Imbelloni – – – – 118

*The Subtropical Belt of Old World Empires.* *By* Sten de Geer – – – – 118

*The Topography and History of Beth-Shan.* *By* Alan Rowe. *The four Canaanite Temples of Beth-Shan.* *By* G. M. Fitzgerald. *Beth-Shan Excavations* 1921–23. *By* G.M. Fitzgerald. *The third Wall of Jerusalem.* *By* E. L. Sukenik *and* L. A. Mayer 121

*History of Palestine and Syria to the Macedonian Conquest.* *By* A. T. Olmstead – 124

*The Quarterly of the Department of Antiquities in Palestine* – – – – – 125

---

*'Roman Gaul'—a rejoinder and reply* – – – – – – – – – 126


## EDITORIAL NOTICES

ANTIQUITY is published quarterly on the 1st of March, June, September, and December.

THE ANNUAL SUBSCRIPTION (including postage) is ONE POUND (United States, 5 DOLLARS). It is payable in advance to the ASSISTANT EDITOR, 24 Parkend Road, Gloucester, England.

SINGLE COPIES may be obtained through any bookseller for 5s. 6d., which includes postage. Trade orders should be addressed to the printer, John Bellows, Gloucester, England.

MSS (whether in the form of Articles or Notes) offered for publication should be sent to the EDITOR, O. G. S. CRAWFORD, Nursling, Southampton, England, and a stamped addressed envelope enclosed. All MSS must be typewritten. Payment is made for Articles only. The EDITOR is not responsible for the opinions expressed by contributors.

ADVERTISEMENTS, and all communications relating to them, to be sent to the ASSISTANT EDITOR, and BOOKS for REVIEW should be addressed to the EDITOR.

CLOTH CASES (lettered back and side) for binding Volume V (nos. 17–20) can be obtained from John Bellows, Gloucester, England, 4s. post free, or if the numbers are sent to him (post paid) the inclusive charge for case and binding will be 7s. 6d. Remittance must accompany the order.

# Antiquity

## A Quarterly Review of Archæology

*Edited by O. G. S. Crawford, F.S.A.*

## JUNE 1932


| | Page |
|---|---|
| Editorial Notes | 129 |
| A Prehistoric Metropolis: the first Verulamium. By R. E. M. Wheeler | 133 |
| Balloon Photography and Archaeological Excavation. By P. L. O. Guy | 148 |
| The Kelts in Britain. By Iorwerth C. Peate | 156 |
| British Hanging-Bowls. By T. D. Kendrick | 161 |
| A Chronological Table of Prehistory. By Miles Burkitt and V. Gordon Childe | 185 |
| Chronology of Prehistoric Europe: a review. By V. Gordon Childe | 206 |
| Notes and News :— | 213 |
| Communal Burial, 213; the Name of the Giant of Cerne, 214; Palaeolithic axes from Transjordan, 216; Harpoon found in the North Sea, 217; Archaeological research in Turkey, 218. | |
| Recent Events | 222 |
| Some Recent Articles | 228 |
| Reviews (*for list see next page*) | 233 |


*Editorial Notices, see page 2 of cover*

*Price 5s 6d—Annual Subscription 20s.*

## REVIEWS


| | Page |
|---|---|
| *Early Man in North-East Yorkshire.* *By* Frank Elgee | 233 |
| *Schachtgräber von Mykenai.* *By* Georg Karo | 235 |
| *Seventy years in Archaeology.* *By* Sir Flinders Petrie | 237 |
| *Anatolia through the Ages.* *By* Erich Schmidt | 237 |
| *Die Ausgrabungen von Samarra.* *By* Ernst Herzfeld | 239 |
| *The Temple of the Tooth in Kandy.* *By* A. M. Hocart | 240 |
| *The Kadama Kula.* *By* George Moraes | 240 |
| *Bronze Implements from Donhead St. Mary.* *By* A. D. Passmore | 240 |
| *Introduction to Physical Anthropology.* *By* E. P. Stibbe | 241 |
| *Short course on Physical Anthropology.* *By* M. R. Drennan | 241 |
| *Scottish Place-Names.* *By* W. C. Mackenzie | 242 |
| *Die Jungneolithischen Kulturen in Westdeutschland.* *By* R. Stampfuss | 243 |
| *Offa's Dyke.* *By* Cyril Fox *and* D. W. Phillips | 244 |
| *The 'Sanctuary' on Overton Hill.* *By* M. E. Cunnington | 244 |
| *Easton Down, Winterslow.* *By* J. F. S. Stone | 245 |
| *Der Tell Halaf.* *By* Max von Oppenheim | 246 |
| *Stone Age Cultures of Kenya Colony.* *By* L. S. B. Leakey | 247 |
| *Die Bauart der Einzelgräber.* *By* A. E. van Giffen | 249 |
| *Bushman Art.* *By* Hugo Obermaier *and* Herbert Kuhn | 254 |
| *Excavations at Olynthus.* *By* David M. Robinson | 254 |
| *Greek Cities in Italy and Sicily.* *By* David Randall-MacIver | 256 |


## EDITORIAL NOTICES


ANTIQUITY is published quarterly on the 1st of March, June, September, and December.

THE ANNUAL SUBSCRIPTION (including postage) is ONE POUND (United States, 5 DOLLARS). It is payable in advance to the ASSISTANT EDITOR, 24 Parkend Road, Gloucester, England.

SINGLE COPIES may be obtained through any bookseller for 5s. 6d., which includes postage. Trade orders should be addressed to the printer, John Bellows, Gloucester, England.

MSS (whether in the form of Articles or Notes) offered for publication should be sent to the EDITOR, O. G. S. CRAWFORD, Nursling, Southampton, England, and a stamped addressed envelope enclosed. All MSS must be typewritten. Payment is made for Articles only. The EDITOR is not responsible for the opinions expressed by contributors.

ADVERTISEMENTS, and all communications relating to them, to be sent to the ASSISTANT EDITOR, and BOOKS for REVIEW should be addressed to the EDITOR.

CLOTH CASES (lettered back and side) for binding Volume V (nos. 17–20) can be obtained from John Bellows, Gloucester, England, 4s. post free, or if the numbers are sent to him (post paid) the inclusive charge for case and binding will be 7s. 6d. Remittance must accompany the order.

[illegible] 82.084

# Antiquity

## A Quarterly Review of Archæology

*Edited by O. G. S. Crawford, F.S.A.*

SEPTEMBER 1932


| | Page |
|---|---|
| Editorial Notes | 257 |
| Two Greek Fortresses in Sicily. By R. G. Collingwood | 261 |
| The Oxford Excavations at Hira, 1931. By D. Talbot Rice | 276 |
| The Paradox of Celtic Art. By R. E. M. Wheeler | 292 |
| German fortified Churches in Transylvania. By E. G. Sebastian | 301 |
| Ancient Agriculture. By G. W. B. Huntingford | 327 |
| Notes and News :— | |
| The Archaeologist and the Man in the Street, 338 ; The Lion and the Unicorn, 341 ; The Roman Ferry across the Wash, 342 ; General Pitt-Rivers' section of Wansdyke, 349 ; Roman Road from London to Sussex, 350 ; An important link between Ancient India and Elam, 356 | |
| Recent Events | 358 |
| Reviews (*for list see next page*) | 362 |


*Editorial Notices, see page 2 of cover*

*Price 5s 6d—Annual Subscription 20s.*

## REVIEWS


Page

*Sailing Ships. By* G. S. Laird Clowes – – – – – – – – 362
*Les Silex de Budel. By* J. Butter – – – – – – – – 363
*Rock-paintings of North-West Córdoba. By* G. A. Gardner – – – – 364
*Wanderings in Greece. By* F. S. Burnell – – – – – – – – 366
*Sculptured Portraits of Greek Statesmen. By* Elmer G. Suhr – – – – 366
*The Royal Tombs at Dendra. By* Axel W. Persson – – – – – – 367
*A Clue to the Cretan Scripts. By* F. Melian Stawell – – – – – – 368
*Die Form der Paläolithischen Geräte. By* F. Herig *and* G. Kraft – – – 369
*Kulturstromungen in Europa zur Steinzeit. By* G. Rosenberg – – – – 370
*Roman Britain. By* R. G. Collingwood – – – – – – – – 372
*The Romans in Britain. By* A. R. Burn – – – – – – – – 372
*The Acropolis. By* Walter Hege *and* Gerhardt Rodenwaldt – – – – – 373
*Nordisk Kultur* – – – – – – – – – – – – – 374
*The Alphabet. By* Martin Sprengling – – – – – – – – 375
*Medieval Sculpture in France. By* Arthur Gardner – – – – – – 375
*Die Germanischen Griffzungenschwerter. By* Ernst Sprockhoff – – – – 376
*Art in the life of Mankind. By* Allen W. Seaby – – – – – – – 377
*History and Antiquities of the Scunthorpe and Frodingham District. By* Harold E. Dudley 378
*Catalogue of the Greek Vases in the Royal Ontario Museum of Archaeology, Toronto. By* David M. Robinson – – – – – – – – – – – – 379
*Excavations at Kish* – – – – – – – – – – – – 380
*Les Origines du Titre de Saint-Martin aux Monts à Rome. By* René Vielliard – – 381
*Waters of Arun. By* A. Hadrian Allcroft – – – – – – – – 381
*Der Breite Berg bei Striegau. By* G. Bersu *and others* – – – – – 382
*Kulturgeschichtliche wegweiser durch das Römisch-Germanische Zentral-Museum* – – 383
*Excavations at Eutresis in Boeotia. By* Hetty Goldman – – – – – 383


## EDITORIAL NOTICES


ANTIQUITY is published quarterly on the 1st of March, June, September, and December.

THE ANNUAL SUBSCRIPTION (including postage) is ONE POUND (United States, 5 DOLLARS). It is payable in advance to the ASSISTANT EDITOR, 24 Parkend Road, Gloucester, England.

SINGLE COPIES may be obtained through any bookseller for 5s. 6d., which includes postage. Trade orders should be addressed to the printer, John Bellows, Gloucester, England.

MSS (whether in the form of Articles or Notes) offered for publication should be sent to the EDITOR, O. G. S. CRAWFORD, Nursling, Southampton, England, and a stamped addressed envelope enclosed. All MSS must be typewritten. Payment is made for Articles only. The EDITOR is not responsible for the opinions expressed by contributors.

ADVERTISEMENTS, and all communications relating to them, to be sent to the ASSISTANT EDITOR, and BOOKS for REVIEW should be addressed to the EDITOR.

CLOTH CASES (lettered back and side) for binding Volume V (nos. 17–20) can be obtained from John Bellows, Gloucester, England, 4s. post free, or if the numbers are sent to him (post paid) the inclusive charge for case and binding will be 7s. 6d. Remittance must accompany the order.

[ 02.004

# Antiquity

## A Quarterly Review of Archæology

*Edited by O. G. S. Crawford, F.S.A.*

## DECEMBER 1932


| | Page |
|---|---|
| Editorial Notes | 385 |
| Ancient Cultivations. By E. Cecil Curwen | 389 |
| Bee-hive Dwellings of Apulia. By Lancelot G. Bark | 407 |
| Dogs. By Max Hilzheimer | 411 |
| Alleged Norse Remains in America. By G. M. Gathorne-Hardy | 420 |
| The Israelites in Sinai. By C. S. Jarvis | 434 |
| Maze Symbolism and the Trojan Game. By W. F. J. Knight | 445 |
| Notes and News :— | |
| Battle of Mount Badon, 459 ; Some Monuments of Armenia, 463 ; New Roman Site in Cumberland, 466; Thirteenth century Church at Nicosia, Cyprus, 469 ; Yarnbury Castle, 471 ; The Romsey Horn, 474 ; Sculptured Rock at Traprain Law, 474; Palisade at Hembury Fort, 475 ; Gaza, 477 | |
| Recent Events | 478 |
| Some Recent Articles | 484 |
| Reviews (*for list see next page*) | 488 |
| Title-page, Contents, and Index, Volume VI | |


*Editorial Notices, see page 2 of cover*

*Price 5s 6d—Annual Subscription 20s.*

## REVIEWS


Page

*Report on the Excavation of the Prehistoric, Roman, and Post-Roman Site in Lydney Park, Gloucestershire.* *By* R. E. M. Wheeler *and* T. V. Wheeler – – – – – 488
*Index of Potters' Stamps on Terra Sigillata, Samian Ware.* *By* Felix Oswald – – 490
*Préhistoire, number* 1 – – – – – – – – – – – – 491
*Map of Neolithic Wessex* – – – – – – – – – – – 492
*Geography of the Mediterranean Region.* *By* E. C. Semple – – – – – 494
*Le Mura di Roma Repubblicana.* *By* Goesta Saeflund – – – – – – 496
*Distribution of the Aboriginal Population of Michigan.* *By* W. B. Hinsdale – – – 498
*Local Papers, Archaeological and Topographical.* *By* Heywood Sumner – – – 499
*Text-Book of History.* *By* O. V. Trachtenberg *and others*– – – – – – 500
*Archaeology of Somerset.* *By* Dina Portway Dobson – – – – – – 501
*Fara.* *By* Ernst Heinrich – – – – – – – – – – – 502
*An Archaeological Tour in Gedrosia.* *By* Sir Aurel Stein – – – – – – 504
*Le feu et l'industrie de pierre et d'os dans le gisement du ' Sinanthropus ' à Chou Kou Tien.* *By* H. Breuil – – – – – – – – – – – – – 507
*Le feu et l'industrie lithique et osseuse à Chou Kou Tien.* *By* H. Breuil – – – 507
*Quartz and other Stone Artifacts in the Lower Pleistocene Hominid-bearing sediments of the Choukoutien cave deposit.* *By* W. C. Pei – – – – – – – 507
*The Map of England.* *By* Sir Charles Close – – – – – – – – 509
*Archaeology of Cornwall and Scilly.* *By* H. O'Neill Hencken – – – – – 510
*Report on Excavations at Jemdet-Nasr.* *By* E. Mackay – – – – – – 511
*New Light from Armageddon.* *By* P. L. O. Guy – – – – – – – 512


## EDITORIAL NOTICES


ANTIQUITY is published quarterly on the 1st of March, June, September, and December.

THE ANNUAL SUBSCRIPTION (including postage) is ONE POUND (United States, 5 DOLLARS). It is payable in advance to the ASSISTANT EDITOR, 24 Parkend Road, Gloucester, England.

SINGLE COPIES may be obtained through any bookseller for 5s. 6d., which includes postage. Trade orders should be addressed to the printer, John Bellows, Gloucester, England.

MSS (whether in the form of Articles or Notes) offered for publication should be sent to the EDITOR, O. G. S. CRAWFORD, Nursling, Southampton, England, and a stamped addressed envelope enclosed. All MSS must be typewritten. Payment is made for Articles only. The EDITOR is not responsible for the opinions expressed by contributors.

ADVERTISEMENTS, and all communications relating to them, to be sent to the ASSISTANT EDITOR, and BOOKS for REVIEW should be addressed to the EDITOR.

CLOTH CASES (lettered back and side) for binding Volume VI (nos. 21–24) can be obtained from John Bellows, Gloucester, England, 4s. post free, or if the numbers are sent to him (post paid) the inclusive charge for case and binding will be 7s. 6d. Remittance must accompany the order.

# *SPECIAL OFFER*

Surplus copies of the following numbers of ANTIQUITY are offered for THREE SHILLINGS each NET, post paid. The number available is not large and the right to withdraw the offer at any time is reserved. Remittances *must* accompany orders, which should be addressed to

*The Assistant Editor, 24 Parkend Road, Gloucester.*

The titles of some of the important articles (nearly all illustrated) are given below. In ordering, the numbers in brackets should be stated.

---

OUR DEBT TO ROME, by O. G. S. Crawford. (6)
ROCK-PICTURES IN THE LIBYAN DESERT, by D. Newbold. (7)
CORNISH PLACE-NAMES, by J. E. Gover. (7)
SWISS LAKE-DWELLINGS, by Paul Vouga. (8)
STONE CISTS, by O. G. S. Crawford. (8)
MONASTERIES OF MOUNT ATHOS, by D. Talbot Rice. (8)
MAGIC ORIGIN OF PREHISTORIC ART, by Count Bégouen. (9)
EARLIEST CHRISTIAN CHURCHES IN ENGLAND, by C. R. Peers. (9)
STONEHENGE (coloured plan), by R. S. Newall. (9)
DYKES, by Cyril Fox. (10)
ROMAN SIEGE OF MASADA, by Christopher Hawkes. (10)
ARTHUR'S BATTLES, by W. G. Collingwood. (11)
TOWN AND COUNTRY IN ROMAN BRITAIN, by R. G. Collingwood. (11)
ZIMBABWE, by G. Caton-Thompson. (12)
GERMAN EXCAVATIONS AT CTESIPHON, by Oscar Reuther. (12)
BEGINNINGS OF EGYPTIAN CIVILIZATION, by Guy Brunton. (12)
NEOLITHIC CAMPS, by E. Cecil Curwen. (13)
EARLY NAMES OF BRITAIN, by Eilert Ekwall. (14)
THE GLOZEL FORGERIES, by A. Vayson de Pradenne. (14)
GRIM'S DITCH IN WYCHWOOD, by O. G. S. Crawford. (15)
THE FIRST MONASTERIES, by E. H. Sawyer. (15)
DEWPONDS, by E. A. Martin. (15)
SUBMARINE DISCOVERIES IN THE MEDITERRANEAN, by A. Merlin. (16)
THE LION AND THE UNICORN, by C. G. E. Bunt. (16)

# Chronological Table

of

# Prehistory

*by*

Miles C. Burkitt

*and*

V. Gordon Childe

*An attempt to visualize as a whole the Main Currents of Human History*

---

*Reprinted from ANTIQUITY, June 1932*

The Table, with Introduction and Index,
20 pages - - *price 2s 6d*

The Table only - - *price 1s*

Applications for copies to be addressed, **with remittance, to**
**The Assistant Editor**
**24 Parkend Road Gloucester, England**

DEC 14 1932

PRINTED BY JOHN BELLOWS, GLOUCESTER